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ABSTRACT

This bibliography, representing trends and progress in the field of nutrition education, is divided into six sections: (1) policy issues; (2) conceptual approaches; (3) baseline information and ethnographies; (4) case studies; (5) exemplary materials; and (6) evaluation. The section on case studies is subdivided into sections focusing on general studies and studies related to: Africa; Asia, the Near East, the Pacific; Europe; Latin America and the Caribbean; and North America. Entries (numbered consecutively from 1 to 384) include the title, source, publication date, number of pages, and annotation (some entries are not annotated). A geographic index and a topic index are included. Preceding the bibliography is an analysis of the state of the art in nutrition education, indicating that the literature of the last 5 years reflects a growing focus on participatory teaching and learning methodologies and on a commitment to using education and communications as interventions to change the attitudes, behaviors, and health and nutrition status of target group communities. The emphasis has shifted away from a concern with the simple dissemination of knowledge and information to the transmission of messages designed to improve health and nutrition-related behavior through reinforcing channels of communication. (JN)

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Nutrition education series

Issue 7

Nutrition education: State-of-the-art A review and analysis of the literature

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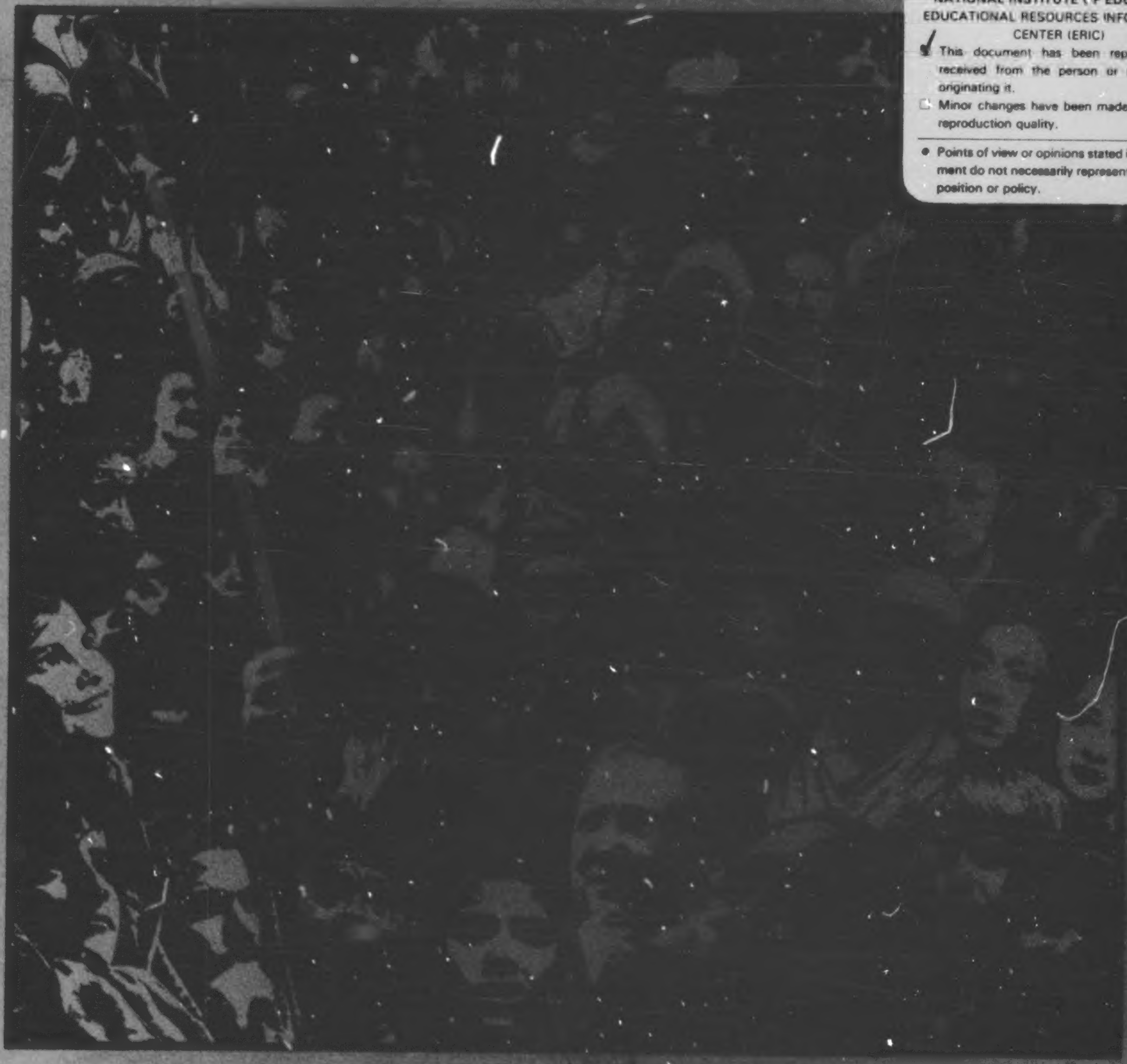

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NUTRITION EDUCATION SERIES

ISSUE 7

NUTRITION EDUCATION: THE STATE OF THE ART
REVIEW AND ANALYSIS OF THE LITERATURE

by

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and
Joanne P. Nestor Tighe

Division of Science, Technical
and Vocational Education

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PREFACE

The art and science of nutrition education has been evolving rapidly. The materials in this state of the art review and analysis of the literature were selected to represent recent trends and progress in the field. The authors of this bibliography are associated with Education Development Center in Newton, Massachusetts, U.S.A. The Education Development Center is a non-profit institution that specializes in the application of education, communications, and training methodologies to the solution of public health and nutrition problems. Ronald C. Israel is the Education Development Center Senior Associate for Development and Director of its International Nutrition Communication Service (INCS), a project that provides technical support for nutrition education in developing countries. Joanne P. Nestor Tighe is Publication Coordinator for the International Nutrition Service and Editor of Nutrition Planning, an international journal of abstracts about food and nutrition policy, planning, and programming.

This bibliography will also appear as a Bulletin of the International Bureau of Education (No. 232, 3rd Quarter 1984) in English, French, and Spanish, obtainable from the national distributors of Unesco publications.

The ideas and opinions expressed in the analysis of the state of the art and annotated bibliography are those of the authors and do not necessarily represent the views of Unesco. The designations employed and the presentation of material throughout the monograph do not imply the expression of any opinion whatsoever on the part of Unesco concerning the legal status of any country, territory, city or area of its authority or concerning its frontiers and boundaries.

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ANALYSIS OF THE STATE OF THE ART OF NUTRITION EDUCATION

The art and science of nutrition education has reached a milestone in its development. The literature of the last five years reflects a growing focus on participatory teaching and learning methodologies and on a commitment to using education and communications as interventions to change the attitudes, behaviors, and health and nutrition status of target group communities. The emphasis has shifted away from a concern with the simple dissemination of knowledge and information, primarily in a one-to-one classroom or clinical setting, to the transmission of messages designed to improve health and nutrition-related behavior through reinforcing channels of communication. We have witnessed a broadening of the professional base of those who practice nutrition education; nutritionists and public health professionals increasingly are being joined by experts in education, communication, and training.

The major question now has become how to translate this new base of experience into more effective policies and programs that can help solve the wide range of serious nutritional problems affecting the health of people around the world. Few if any countries have clearly defined and budgeted national nutrition education policies that articulate priority problems, target groups, messages, training goals, etc. Antrobus (1977) in the Caribbean, Quelch (1977) in Canada, the Club Europeen De La Sante (1980), and the United States Department of Agriculture (Cross, 1980) all speak of the need for such a policy, but there are not many precedents or policy models. It is hard enough in most places to develop consensus around what constitutes a country's nutrition policy, let alone what its nutrition education priorities should be (the two are often confused).

One of the more interesting efforts to establish a national nutrition education policy was associated with the Colombian PAN program (Mejia De Pizano, 1980), a unique multi-sectoral effort designed to combat malnutrition. Much of PAN has focused on the use of educational interventions to improve the nutrition-related skills of health care providers and to change target group nutritional behaviors. In the Netherlands (1983), the Primary Education Act of 1985 will make it compulsory to teach "healthy living," including nutrition, at all levels in the formal school system.

Bilateral and international donor agencies have increased their policy and program commitment to nutrition education in recent years. The United States Agency for International Development's support for the activities of the International Nutrition Communication Service (INCS) represents the largest donor agency programmatic commitment to date specifically for the use of education and communication to solve nutrition problems of developing countries. The World Bank (Hornik, 1983) has increased its funding for the educational components of nutrition sector loans, notably in Indonesia; UNICEF has provided extensive technical and financial support for the brazilian breast feeding promotion program; Unesco (1981, 1983) continues to publish excellent case studies, curricula, and source book materials for the field. FAO (McNaughton) also has stepped up its interest and commitment to nutrition education.

The proper scope of a nutrition educator's focus has been a major policy issue over the last five years. Eide (1982) and Gussow (1980) argue for expanding nutrition education's area of activity to include all aspects of the food cycle, not just the consumer. Gussow and Contento (1983) suggest three priority areas of concern for future nutrition education activity: (1) effects of urbanization; (2) the wider distribution of processed foods; and (3) the growing women's movement.

New approaches to nutrition education in both substance and methodology imply new considerations for the training of nutrition educators. Wardlaw (1981) sees that future training programs should address the relationships between biological and social sciences, between nutrition education and health education, and between academia and field practice. Israel (1984) argues that nutrition educators ought to begin to receive training in social marketing related skills.

Austin and Zeitlin (1981) summarize many of the new conceptual approaches that have been applied to the field of nutrition education over the last decade, such as new uses of mass media, traditional folk media, and nonformal education. An interesting distinction is made in much of the literature between nutrition education in the more economically developed countries, which tends to stress the provision of information for individual choice, and nutrition education in developing countries, which tends to focus on behavior change objectives.

The pros and cons of using mass media are described by Leslie (1978). Manoff (1974, 1980, 1983) is an articulate spokesman for the use of mass media to solve nutrition problems. He argues that the success of a campaign depends primarily upon message content and reach and frequency of delivery.

The conceptual need to develop multi-sectoral promotional strategies for nutrition education is best exemplified by the experience to date with breast feeding promotion programs. WHO conferences in Barbados, Nigeria, and Brazil (1979), amplified by subsequent experience in many countries around the world, have defined such a strategy to include supportive government policy, such as a code regulating the marketing of breast milk substitutes (WHO, International Code, 1981); supportive health care practices such as the establishment of rooming-in facilities at hospitals and clinics; the training of health care professionals in techniques of lactation management; the development and transmission of breast feeding behavior change messages to target communities; and private sector participation through the provision of creches or day-care facilities for nursing mothers. Nutrition education has role in the design and implementation of each component as well as the strategy as a whole. In countries where breast feeding promotion has been most successful, e.g. Brazil, nutrition communications professionals have been involved with all aspects of the program, not just the design of messages for the public. This model could be applied to the promotion of other important nutrition behaviors, such as weaning practices.

The difficulties involved in cross-cultural nutrition communications are described by Fugelsang (1982) who admonishes us to rethink some of our basic assumptions about language, learning, and understanding. The starting point in a Western conceptual model may be wrong. Nichter and Nichter (1981) outline the role that anthropology can play in the design of nutrition education projects. The Nichters believe that nutrition messages need to be negotiated within the context of traditional belief systems about food and health. Berggren and Murray (1980), in a conceptual framework for a nutrition education baseline study in Cameroon, describe a further important role for ethnographers: to research the attitudes and behaviors of the target community related to a given nutrition or health problem. Such qualitative research is essential for the design of project baseline studies, messages, and materials. Target community involvement in all phases of a nutrition education project is advocated by Drummond (1975) who applied the participatory educational principles of Paolo Freire to the design of a project in Northeast Brazil.

A growing body of literature profiles target group knowledge, attitudes, and practices in various countries. Israel and Tighe (1982-84) have edited a series of Maternal and Infant Nutrition Reviews which summarize available data on maternal and infant nutritional status, beliefs, practices, policies, and programs in thirty-five developing countries. The World Health Organization (Contemporary Patterns..., 1981) offers a detailed look at breast feeding practices in nine countries. FAO offers an excellent Bibliography of Food Consumption Surveys (1981) for those interested in documents on aggregate intake patterns (FAO also offers its basic Food Composition Table reference documents). The Population Reference Service and UNICEF annually publish an excellent chart, entitled World's Children Data Sheet, that highlights basic epidemiological information about the nutrition and health status of the world's children. CARE (Vemury, 1980) provides us with in-depth knowledge about traditional nutrition related beliefs in six countries (Peru, Colombia, Guatemala, Tunisia, Jordan, and Bangladesh). In short, there is less and less excuse for nutrition educators to go into the field without knowing certain basic facts about a country's nutritional problems and the knowledge, attitudes, beliefs, and practices of a target community, though referenced data should never be used alone as a basis for the development of educational messages or materials.

There also are some excellent references available on tools that will help the nutrition educator collect baseline information. Griffiths' classic work on Growth Monitoring (1981) describes in detail the techniques available for weighing and measuring children. Essential dietary recall methodologies are referenced by Krantzler et al. (1982). Griffiths (in press) and Rizvi (in press) believe they have developed useful ways to chart dietary intake and relate it to the design of educational interventions. Martorell (1982) profiles nutrition and health status indicators that can be used for standard of living surveys in developing countries. Berggren and Murray (1980), Pelto (1981), and Van Esterik (1983) profile ways in which ethnographic research contributes to the design of baseline studies. Sadsad (1979), Dumlao and Onate (1980), and Johnston and Schwartz (1978) describe ways in which baseline studies can be used to acquire information about channels of communication that influence the health and nutrition related values of a community.

The literature on nutrition baseline surveys is notable for two conspicuous omissions. The first is the absence to date of any overall baseline study design manual that integrates epidemiological, anthropometric, ethnographic, communications and survey design and analaysis techniques. The second is the absence of a salient document highlighting the limitations of baseline research, e.g. it is frequently costly, quickly becomes out of date, can never anticipate all the relevant questions, etc. We hope someone will rush into fill these voids before too long.

The contradiction between the promise of nutrition education and its reality is brought to light by a review of existing case studies. Most of the nutrition education case study literature focuses on small experimental projects whose very nature is oriented more towards research than action, of limited duration, involving small groups of people. Evaluation of impact is usually expressed in terms of changes in knowledge and rarely in terms of behavior or health and nutrition status. This reflects in part the fact that few governments have made commitments to a sustained use of educational communications as a means of changing group behavior and nutrition status.

In recent years there have been a small but highly significant number of national and regional-level projects which might serve as models and precedents that other countries can follow. The Indonesian Nutrition Improvement Project (Mantra, 1982; Manoff International, 1983) is a case in point. The nutrition education component of this project succeeded in demonstrating that nutrition education alone, without any other complementary intervention such as the provision of supplementary food, could succeed in improving the nutritional status of the target community. Zeitlin and Formacion (1977) document the positive impact that the Philippine Iloilo radio advertising campaign had on children's weight for age.

The Moroccan Food Aid and Nutrition education project (Gilmore et al., 1980) is another example of a successful large-scale nutrition education project. The inclusion of well-designed educational intervention in a national food and distribution program resulted in a 69% reduction in the incidence of moderate and severe malnutrition, apparently through increases in mothers' knowledge and changes in their food-related practices. Similarly, the breast feeding promotions in Brazil (Jelliffe and Jelliffe, 1983), Trinidad (Gueri, 1978), and Yemen (Greiner, 1982) have been effective in increasing breast feeding duration and frequency levels among women of all socioeconomic classes.

There also are few country-level case studies that can serve as precedents for dealing with health problems related to overconsumption. Lamm (1981) reports on the achievements of WHO's cardiovascular disease program in Europe. Buhl (1980) reports on the French experience in public nutrition education programs (which has yet to be formally assessed). The United States National High Blood Pressure Education Program is beginning to experiment with educational messages on diet as a way to prevent and control high blood pressure, and there is a base of experience (e.g., Brownell, 1982) related to the use of behavior modification techniques for weight control programs which needs to be analyzed more extensively. In general, however, more emphasis and resources have been put into educational programs designed to prevent or remedy malnutrition in developing countries than in controlling overconsumption in the West.

The case study literature is filled with examples of the application of different teaching and learning methodologies to nutrition problems. Case studies involving the use of mass media are by now quite abundant (Balayan and Minakari, 1981; Debry, 1980; Duyff, Marcantel and Ray, 1982; Zeitlin and Formacion, 1977). Greiner and Latham (1982) described the way in which commercial advertising can negatively affect food practices, focusing on the inappropriate trend to early bottle feeding in developing countries. Colle and Colle (198) describe how modern audio-visual technology, e.g. cassette recorders, can effectively be used by nutrition educators in developing countries. Berggren's description of nutrition education in mothercraft centers in Haiti (1981) makes a case for using carefully designed demonstration education programs for the promotion of home based weaning foods; Srinivasan and Sawyer (1980) describe how participatory learning techniques are often needed to involve the target community in a nutrition education project.

An array of exemplary nutrition education materials now exists from most regions of the world (the Near East is one exception). These materials are highlighted by Israel and Lamptey (1982) by Griffiths et al. (1984), the United States Department of Agriculture (1982), and the U.S. Centers for Disease Control (1982). Training manuals in nutrition have been written for a wide variety of target audiences. Most of them tend to focus more on the transmission of technical information about nutrition and less on the art and science of nutrition education. Werner's Helping Health Workers Learn (1982) and Save the Children's Bridging the Gap (1982) are exeptions to this trend. Nutrition education needs training materials that can be used to increase the project design, management, and evaluation skills of nutrition educators.

The rapidly expanding literature on evaluation of nutrition education evaluation is filled with interesting attempts to develop techniques that will document the impact of communications interventions. In an era when resources for social programs are scarce, those in charge of public sector health and nutrition policy must document their programs' effectiveness. Nevertheless, as evaluation professionals such as Green (1977) and Hornik (in press) have pointed out, the impact of nutrition education is extremely difficult (and costly) to document. The many factors, intrinsic and extrinsic to the program, that affect the target groups' knowledge, attitude, behavior, and health status make cause-and-effect relationships difficult to establish. Many projects operate without a well-established baseline of information or a control group. Even with baseline information and control groups, documented impacts still are questioned. There will always be a need to conduct impact evaluations, of course, but nutrition educators should learn to budget wisely for this phase of their projects and to review and analyse quantified outsomes before reaching final conclusions.

Green, Hornik, and others emphasize the need for process evaluations to document projects' success or failure in carrying out intended activities. For example, does the training of physicians and nurses in clinical techniques of lactation management really make a difference in the ability of health professionals to promote breast feeding, or are there basic constraints of time and economic considerations that preclude them from doing so? Formative evaluation and project monitoring should be given just as much emphasis as impact or summative evaluation, because in a sustained nutritional intervention there is always a need to retrain staff and to redesign messages and materials. Monitoring and information systems designed to assure effective project management frequently are missing from nutrition education projects.

In conclusion, the literature of the last five years reflects a new set of priorities for nutrition education. There is a growing commitment to the systematic application of skills from the fields of anthropology, epidemiology, education, communications, nutrition, and the social sciences, to the solution of nutrition problems. Nutrition educators are saying that education, as an intervention in its own right, ought to be taken seriously in the field of nutrition and public health. There are now enough successful case studies to make that contention seem plausible.

The future lies in convincing policy-makers that an investment in nutrition education is worthwhile, a difficult task given the fact that nutrition itself tends to be a relatively undersupported item in most national health care programs. This leads us to suggest that policy makers themselves ought to be a priority target audience for nutrition education. Lessons might be drawn from the family planning field, where major resources have been devoted to convincing policy-makers of the need to invest in family planning programs. It is interesting to note that present family planning programs have considerably more program resources behind them than do nutrition programs. Perhaps it is time to recognize that scaling up of successful nutrition education experience to date, based on carefully crafted bottom-up communications methodologies, will never happen unless those at the top become convinced of the urgency of nutrition problems and of the ability of nutrition educators to do something about it.

ANNOTATED BIBLIOGRAPHY

The materials presented in this bibliography were drawn from the archives of institutions around the world concerned with nutrition education, including WHO, Unesco, UNICEF, national nutrition and health ministries and organizations, and published periodicals and bibliographies, as well as the resources of the International Nutrition Communication Service. In selecting materials for sections such as "Case Studies," for which there were far more documents available than could be accomodated in this publication, we have tried to provide a selection representing the full range of geographic and topical resources, while including all materials that we considered exemplary. We have included materials over five years old only if they were exemplary or unique. Thus, this listing presents only a sample of the vast array of recent literature on nutrition education. We hope that it will adequately represent the new depth and breadth of research and developments in this growing field.

I: Policy Issues

1. ANTROBUS, A.C.K. The challenge of nutrition education in the Caribbean. Cajanus, vol. 10, 1977, pp. 22-31.

To avoid discrepancies between nutrition knowledge and the application of this knowledge, nutrition education must become part of national and regional development. The key is motivation at all levels: professional, social, and political. Key problems to be faced by nutrition educators in the Caribbean are: promotion of breast feeding; increasing reliance on local products; better use of family food resources; improving hygiene; and developing a better monitoring system for mothers and their children. Nutrition education, particularly mass media campaigns using radio, will play a key role; development of suitable materials should be a high priority.

2. AUSTIN, J.E. Confronting Urban Malnutrition: The Design of Nutrition Programs. Baltimore, The Johns Hopkins University Press, 1980. 119p. (World Bank Staff Occasional Papers Number 28)

This book discusses the full range of nutrition interventions to be considered in addressing urban nutrition problems. Nutrition education, although it can be a separate intervention, is also one aspect of any other intervention, to ensure that it reaches the appropriate audience, that they are aware of its existence and how to take full advantage of it. Nutrition education alone is appropriate in situations where a population has (or readily could have) access to a nutritionally adequate diet, but does not do so for lack of information or motivation. Frequently, a family will have adequate resources but distribute them inappropriately; mothers and young children are the most likely to be slighted. The book gives guidance on development of nutrition messages, selection of media, and personnel requirements for this and eight other interventions.

3. BAER, E.C.; WINIKOFF, B., eds. Breastfeeding: Program, policy, and research issues. Studies in Family Planning, vol. 12, no. 4, April 1981, pp. 123-206.

This special issue of the journal presents nine papers on the importance of breast feeding and the need to integrate education about breast feeding into health and family planning services. Most professionals in health and population acknowledge the superiority of breast feeding; there is increasing agreement that, if possible, lactating women should not be given hormonal contraceptives; and a consensus is emerging on the need to integrate support for breast feeding into the management of birth spacing. The articles review the coincidence of program goals and service opportunities in family planning and breast feeding. Policy recommendations for family planning workers are based on evidence presented in the other papers. Breast feeding promotion and research are discussed; a model is presented. Clarity in definitions will improve the quality of research and the interpretation of data. The structure of a woman's working conditions is identified as the principal social constraint on her ability to breast feed.

4. CLUB EUROPEEN DE LA SANTE. Congrès: Responsabilité individuelle et sociale dans la prévention, 1980. *Revue Française de la Santé Publique*, no. 15, 1981, pp. 13-18.

5. COMMISSION DES COMMUNAUTES EUROPEENNES. *L'Education Nutritionnelle à l'Ecole dans les Pays de la Communauté Européenne*. (Rapport EUR 7331 FR)

This report presents findings and plans for nutrition education in the nine member countries of the European Economic Community (Belgium, Denmark, France, Ireland, Italy, Luxemburg, German Federal Republic, the United Kingdom, and the Low Countries). The first section presents outlines of formal nutrition education conducted in each country, including the basic structure of the education system and the nutrition program in operation. The second section presents nutrition status assessments and risk factors on which to base nutrition planning. The final section proposes a methodology for interventions and evaluation, based on objectives developed by experts from all the countries, organized as a "tree" to be followed for development.

6. CROSS, A.T. USDA's strategies for the 80's: Nutrition education. *Journal of the American Dietetic Association*., vol. 76, no. 4, April 1980, pp. 333-337.

7. DANISH MINISTRY OF EDUCATION. *Dansk Ernaeringsforskning: Status og fremtid*. (Danish Nutrition Education: Status and Future), Copenhagen, 1983. 83p.

This report contains chapters on human nutrition research, a mapping of current Danish nutrition research and education, the need for nutrition research and education, the possibilities of meeting these needs, required resources.

8. DIRECTIONS FOR NUTRITION EDUCATION RESEARCH--THE PENN STATE CONFERENCES. University Park, Pennsylvania, College of Human Development, The Pennsylvania State University, 1980. 108p.

This book presents papers from five conferences on nutrition education research: (1) eating patterns; (2) nutrition communication; (3) formal nutrition education; (4) community nutrition education; and (5) evaluation research in nutrition education. In most panels, there was strong support for investing more time and effort in "theory building" rather than "hypothesis testing" research. Panels also agreed on the need for multidisciplinary collaborative studies to develop standardized instrumentation, substantive methodologies for evaluation measures, and common tools and language for determining devels of behavior change.

9. DUPIN, H. *Rapports Nutritionnels Conseilles pour la Population Française*. Paris, Centre National de la Recherche Scientifique, 1981. 101p. bibl.

10. DWYER, J. National conference on nutrition education: Directions for the 80s. Journal of Nutrition Education, vol. 12, no. 2, supplement 1, 1980, 54p.

This special issue of the journal presents the proceedings of a conference sponsored by the U.S. Departments of Agriculture and of Health, Education, and Welfare to examine the role and future of nutrition education in improving health. Papers address the roles of various government agencies; changing diets, nutritional problems, and strategies needed for the coming decade; and the needs of special groups such as adolescents and the elderly.

11. EIDE, W.B. The nutrition educator's role in access to food—from individual orientation to social orientation. Journal of Nutrition Education, vol. 14, no. 1, March 1982, pp. 14-17.

12. FIDANZA, F.; JELLIFFE, E.F.P.; BAGCHI, K.; et al. Nutrition education and training for health science professionals. World Review of Nutrition and Dietetics, vol. 38, Physiology and Social Nutrition and Nutritional Education, G.H. Bourne, ed. Basel, Switzerland, Karger, 1981. pp. 153-225.

13. GONZALEZ TORO, N.; SANCHEZ RODRIGUEZ, H.; BOCCARDO ZAPATA, H. Alimentación y nutrición [Food and nutrition], Cuadernos Medico-Sociales, vol. 21, no. 4, 1980, pp. 5-115.

This special issue presents a series of articles on nutrition issues of particular concern to Chile: presentation of the current nutrition status situation; training of nutrition education staff; iron and ascorbic acid (vitamin C) supplementation of baby foods; breast feeding promotion; and nutrition education projects.

14. GUSSOW, J.D. Who pays the piper? Teachers College Record, vol. 81, no. 4, Summer 1980, pp. 448-466.

15. GUSSOW, J.D.; CONTENTO, I. Nutrition education in a changing world: A conceptualization and selective review. World Review of Nutrition and Dietetics, in press; New York, Columbia University Teachers College. 1982. 40p.

Determining the state of the art in nutrition education is nearly impossible because, not only is the field changing rapidly, but the information often is not published at all, or is published in informal reports. Nutrition education is essential in the modern world because new food technologies provide an environment in which individuals are continually confronted with the need to make well-informed choices among deceptively designed foods; one can no longer rely on tradition or instinct (if one ever could). This paper presents the scientific and educational bases upon which nutrition education has developed. Sections address formal, informal, and non-formal (mass media and community) approaches; evaluation; and trends in the field. Throughout, the emphasis is on developing a coherent concept and practical approach, rather than attempting an exhaustive survey. Examples cited cover a broad range of locations and include several examples of early nutrition research in food behavior and change.

16. HAMBRAEUS, L., ed. Nutrition in Europe: Proceedings of the Third European Nutrition Conference. Uppsala, Sweden, Almqvist & Wiksell, 1980. 150p.

The major topics of this conference included: (1) Europe's contributions in the area of nutrition research for developing countries; (2) food and nutrition policies and planning in industrialized countries, principally in Europe; and (3) specific aspects of nutrition education in Europe, including integration between school and community nutrition education activities in Yugoslavia, public education related to diet and exercise in Sweden, the structure of public nutrition education in the Federal Republic of Germany, the role of mass media in nutrition education in Switzerland, assessment of a community-based nutrition intervention program in Finland, and Norwegian approaches to nutrition and health education including mass screening programs. This volume also includes abstracts of papers presented at the conference of which 13 were principally about nutrition education.

17. HARTY, S. Hucksters in the Classroom. Washington, D.C., Center for the Study of Responsive Law, 1979.

This report presents an account of the effects of commercially-developed education materials in nutrition and other topics. Materials available at little or no cost, developed and provided by the food industry and other special interests, often are biased in favor of particular products or misrepresent the nutritional value of whole categories of foods. The Dairy Council in the United States, for example, produces curricula which have even been adopted by state nutrition education departments, which overemphasize the need for dairy products and include diet plans that feature high-fat dairy products. Teachers should be sufficiently educated in nutrition to be able to assess the appropriateness of offered materials.

18. HAUSMAN, P. Jack Sprat's Legacy. Washington, D.C., Center for Science in the Public Interest, 1981. 288p.

This book presents a view of the food industry in the United States that emphasizes its role in promoting the consumption of specific foods because of their economic impact on the food industry rather than their nutritional value. High-fat foods, particularly those from animal sources, are more expensive to produce and use greater quantities of farm resources per capita and per calorie eventually consumed. The effect of the food industry on food policy in the United States has resulted in a conflict between agricultural and health policies, particularly in the area of fat consumption.

19. HORNIK, R.C. Nutrition Education - A State of the Art Review. Washington, D.C., World Bank, 1983.

Malnutrition is not a problem of insuffcent food, but one of equity--the maldistribution of food resources. Nutrition education is defined as the attempt to enable consumers to use available resources optimally to reach valued ends. If consumers are malnourished in spite of using resources optimally, then there is no place for nutrition education. This paper presents discussions of three questions: is there potential for educational interventions? Do such interventions as have been evaluated have any worthwhile consequence? And, is it possible to extend effective programming on a large scale? The author concludes that there is a "satisfactory and positive answer" to at least the second of these: case studies of several successful programs are presented. Knowledge of the determinants of nutrition-related behaviors is limited: further investigation is needed. The concluding section presents a summary of the expected impact of several possible interventions, including mass media and agricultural extension agents. Finally, specific steps for implementation and research are given.

20. INSTITUT DE NUTRITION, HANOI. *Il Frut un Plan de Recherches Multidiciplinaires pour Resoudre le Problème de l'Alimentation au Vietnam*. Hanoi, Institute of Nutrition, 1981. 11p.

21. ISRAEL, R.C. *Recent Developments in Social Marketing and Their Implications for International Public Health and Nutrition Education*. Newton, Massachusetts, Education Development Center, 1984. 7p.

Social marketing is the application of mass media and advertising principles to the pursuit of social goals. Skills are also borrowed from fields as diverse as anthropology, social sciences, and public administration. Health educators should learn to use social marketing skills, as demonstrated by several examples of successful projects, but awareness of these techniques has not yet reached the classrooms where health educators are trained. The nature and scope of current health problems worldwide demands that health educators, medical professionals, and communications experts become aware of cost-effective means of reaching the public.

22. MANOFF, R.K. Communications perspectives for the 1980s: The new politics of nutrition education. *Journal of Nutrition Education*, vol. 12, supplement, 1980, pp. 112-15.

Mass media will play a growing role in bringing nutrition education to the population. Nutrition educators must be aware of the politics of mass media and must be prepared to act. Political action for nutrition education communications is illustrated in two specific policy initiatives that should involve nutrition educators: that a fixed share of television and radio time be mandated to health and nutrition education, and that it shall be public policy that it is the responsibility of the government to promote dietary goals for the American people and engage in the promotion of the dietary goal foods. Using these initiatives as examples, the author presents the underlying politics and policies and offers suggestions on implementing change.

23. MCNAUGHTON, J.W. Activites de la FAO dans le domaine de l'éducation et de la formation nutritionnelles. pp. 20-4.

This article describes FAO projects in nutrition development, including the origins of needs assessments, technical assistance in developing and conducting nutrition education programs, development of nutrition education materials, establishment of national and regional nutrition institutes (such as INCAP and CFNI), and training nutritionists. FAO plans for future activities in nutrition education development focus on the rural poor, because they are among the hardest to reach. FAO will assist governments in planning and nutrition surveillance; cooperate with other UN agencies' nutritional goals and projects; and promote suitable "training of trainers" for nutrition programs.

24. MEJIA DE PIZANO, J. The educational approach within Colombia's nutrition plan (PAN). International Review of Education, vol. 26, no. 1, 1980, pp. 17-29.

The Colombian Government set up in 1976 a unique multisectoral plan (PAN) to combat the country's serious malnutrition problems. Government agencies and private industries in the sectors of production, distribution, health, sanitation, and education have coordinated their previously independent efforts. Among the interesting aspects are the coordination of sectors through work at various levels and through control of the budget, the limitation of bureaucracy, and the decentralization of decision-making. The ongoing attempts to overcome the difficulties encountered include: making decisions in the face of inconclusive knowledge on what constitutes a well-balanced diet; combating professionals' lack of knowledge about the environment of the poorest percentage of the population; and revising the traditional teaching method to make it more successful through a multi-media approach to assure wider coverage and more impact for the least cost, using materials such as games, puppets, posters, and radio.

25. MOERLOOSE, J. DE: Food for Infants and Young Children: A Survey of Relevant National Legislation. World Health Organization, 1981. 38p. (HLE/FHE/81.1)

This report presents WHO, national, regional, and agency guidelines and policies affecting infant foods. Details are provided on definitions of technical terms, legislative measures, licensing, marketing, qualitative and quantitative standards, labelling requirements, and advertising. Most countries have apparently not given this issue the special attention it deserves, based on information available at the time this paper was composed. Readers are cautioned to remember that legislation must be viewed in the larger context of child feeding, including overall socioeconomic development. Advertising and labelling are major forms of nutrition communications that must not be allowed to disseminate incorrect or harmful messages.

26. MYRES, A.W. Breast-feeding—a national priority for infant health. Journal of the Canadian Dietetic Association, vol. 42, no. 2, April 1981, 11p. bibl.

Private organizations such as the Canadian Pediatric Society and the La Leche League of Canada have joined the national campaign to promote awareness among health professionals. The campaign, initiated in 1979, provided information kits to 40,000 physicians, hospital staff, and public health nurses. A followup study found that the majority did use the materials for self-education and for counseling mothers. Professionals also indicated an interest in receiving further information on infant feeding.

27. NETHERLANDS. Policy Document on Nutrition. The Hague, Ministry of Welfare, Health, and Cultural Affairs, Ministry of Economic Affairs, 1983. 94p.

The main elements of the policy document on nutrition are the encouragement of a sensible diet and the measures necessary to ensure a good supply of healthy foods. It is considered essential that nutrition and eating habits should be included in principle in the syllabus at all levels of education. The Primary Education Act which will come into effect from 1 August 1985 will make it compulsory to teach "healthy living." This will include education about nutrition. In September 1981 talks began at official level between the Ministry of Welfare, Health, and Cultural Affairs and the Ministry of Education and Science about teaching this subject in the lower grades of secondary schools. Health education must be adequately catered for within the curriculum.

28. OLSON, R.E. The Food and Nutrition Board's approach to nutrition education. Journal of Nutrition Education, vol. 12, no. 4, October-December 1980, pp. 188-89.

29. QUEBEC'S POLICY ON NUTRITION. Ministère des Affaires Sociales, Direction Générale de la Planificacion, Service des Etudes Epidemiologigues, 1977. 89p. bibl.

This document presents the Province's entire nutrition program, from assessments of nutrition status and food consumption patterns to analysis of diet-related health problems (including their dollar cost to taxpayers), change objectives, working strategies, implementation programs, plans for program evaluation, and provision for training those who are to conduct the programs.

30. QUELCH, A. The role of nutrition information in national nutrition policy. Nutrition Reviews, vol 35, no. 11, 1977, pp. 289-293.

National nutrition policy must be developed to take into account the complex relationships between nutrition programs, social welfare, general education, agriculture, energy, and international relations. Nutrition education in the form of delivery of nutrition information is one of many options available to policy-makers. Unfortunately, the information delivered by many projects is inconsistent, delivered by underqualified personnel, or overwhelming in quantity. This article describes six steps by which programs can be developed to avoid these and other common pitfalls. Better coordination among interested parties is a prerequisite to success. Comparative studies of different approaches would be useful, possibly leading to an increase in efficiency.

31. RASMUSON, M. Current Practice and Future Directions of Nutrition Education in Developing Countries: A Research and Policy Assessment. Washington, D.C., Academy for Educational Development, 1977. 66p. bibl.

Section I, Experience to Date, reviews research and action programs, noting that until the 1970s, most nutrition education was formal, didactic, and aimed at disseminating information, rather than at changing behavior. Growing awareness of the "nutrition factor" in socioeconomic development and the changing emphasis in international medicine from curative to preventive elevated all nutrition interventions to new importance. Mass media strategies remedied former problems of outreach and impact. Section II, Emerging Trends, presents the state of the art in developing countries and trends in the purpose and scope of the field, specific themes and objectives, audiences, and methods. Section III describes changes in donor agency policies, and Section IV presents trends in related fields, ranging from health education to applied anthropology and social marketing. The final section discusses directions for future research and programming.

32. RESEARCH, EXTENSION AND HIGHER EDUCATION IN HUMAN NUTRITION. Washington, D.C., The Joint Council of Food and Agricultural Sciences, March 1980. 120p.

33. SINCLAIR, H.M.; HOWAT, G.R., eds. World Nutrition and Nutrition Education. Oxford, Oxford University Press, (Medical Publications Series) and Paris, Unesco. 1980. 226p.

This volume presents the work of a conference organized by the International Union of Nutritional Sciences, with support from Unesco, to examine the current status of nutrition education and present recommendations for future work. Examples are provided from the Republic of Korea, Sierra Leone, Guatemala, the United Kingdom, India, Jamaica, and Nigeria.

34. SOLON, F.S. Local government management of nutrition programs. Philippine Journal of Nutrition, vol. 36, no. 1, January-March 1983, pp. 2-8.

This paper, presented to the Philippine Association of Nutrition in 1982, describes the background, present status, and future recommendations of the national Philippine Nutrition Program (PNP), which is designed to generate local responsibility and participation. Initially, the extent of malnutrition was determined through a weighing program (Operation Timbang); local projects were developed based on local needs and resources. Local mayors are responsible for the program, so a major goal is boosting their motivation and information about the program. This paper proposes extensive training programs to be provided by the government to enable local executives to select the national projects for their own areas, to promote decentralization.

35. TASK FORCE REPORTS: NATIONAL CONFERENCE ON NUTRITION EDUCATION. *Journal of Nutrition Education*, vol. 12, no. 2, supplement 1980, pp. 117-137.

36. THOMAS, J. The place of education in a national nutrition policy. *Royal Society of Health Journal*, 1979, pp. 189-195.

Formal and informal education can strongly influence food habits, although the strictly informational approach has been shown to be relatively ineffective. A combination of formal nutrition education for school-age children, together with informal education for adults, would provide a means to implement national nutrition objectives. The changing roles of women and the changing popular diet and attitudes towards food must be monitored, and the information processed in a timely way; coordination of information sources and implementing agencies is essential. Groups with special nutritional needs must be approached by specially trained professionals working in a team. We should remember that the humble potato, suspected of having toxic or aphrodisiac properties, became a staple food without any formal nutrition education encouragement.

37. TOWARDS BETTER HEALTH AND NUTRITION; REPORT OF A TECHNICAL WORKING GROUP MEETING. Unesco Regional Office for Education in Asia and the Pacific, Asian Programme of Educational Innovation for Development, Technical Working Group Meeting on Curriculum Development in Health and Nutrition Education, New Delhi. Bangkok, Unesco Regional Office for Education in Asia and the Pacific, 1981. 83p.

38. ULLRICH, H.D. Towards a national nutrition education policy. *Journal of Nutrition Education*, vol. 11, 1979, p. 60.

39. UNESCO. *Nutrition Education: Relevance and Future*. Paris, Unesco, 1983. 31p. (Division of Science, Technical and Vocational Education, Nutrition Education Series, 5)

To be relevant, nutrition education must take into account not only the nutritional needs of a population but also the social, economic, and cultural context in which food behavior occurs. Education may be formal, but non-formal and informal nutrition education are better suited to many contexts in developing countries, such as educating mothers of young children in appropriate weaning practices. Agriculturally-based nutrition programs can play a useful demonstrative educational role. Formal, school-based education can reach out to other community members. Food and nutrition education is not a luxury, nor should it be limited to home economics students; we all need to learn to eat properly in the complex context of modern foods. Traditional eating patterns are necessarily compatible with survival at least through the childbearing years, but there is no reason to believe that any culture has developed an ideal eating pattern based on available resources. Nutrition science alone, composed of scientific facts, is necessary but not sufficient as a basis for modern nutrition education; the larger social context of the individual and the world must be taken into account. Nutrition education must also motivate individuals to consume the diets they know to be appropriate and should promote consumption of a diet that makes the most of the world's scarce resources. As such, it is part of food policy. There is a lack of qualified teaching personnel, even at the school-age level; public education must be expanded at all levels.

40. UNESCO. Report on consultation on Nutrition in Educational Policy and Planning. Uppsala, Sweden, Department of Education and Institute of Nutrition, Uppsala University, 11-14 September 1979, 22p.

This conference held discussions on the role of malnutrition and undernutrition in physical, intellectual, and behavioral development, especially as they affect educational achievements and performance; and ways in which education can decrease the prevalence of nutrition problems, particularly among disadvantaged groups. This report includes summaries of the papers presented by participants from the fields of education, nutrition, and international agencies.

41. VANDENBERG, L.; KATEREGGA, C.; et al. Nutrition and Food--Education, Policy, and Practice: A Sected, Annotated Bibliography. East Lansing, Michigan, Non-formal Education Information Center, College of Education, Michigan State University, 1982. 76p. (Annotated Bibliography #9)

This bibliography presents extensive descriptions of dozens of publications in nutrition education, policy, and programs; the majority are from or about developing nations. In addition to books, articles, and government reports, the document describes newsletters and periodicals in the field and has a special section on organizations involved in nutrition education.

42. WARDLAW, J.M. Preparing the nutrition education professional for the 1980s. Journal of Nutrition Education, vol. 13, no. 1, March 1981, pp. 6-8.

This paper, presented to the Society's Division of Higher Education, discusses the training needs of nutrition educators. Public health is entering a phase of individual responsibility for one's well-being, and nutrition educators must be able to prepare the public to make good decisions about their diets. The paper addresses these needs from the perspective of three interfaces: between the biological and social sciences, between nutrition education and health education, and between academia and field practice. New graduates' backgrounds will need to be quite different from the backgrounds of those who train them, and "innovative thinking which will enhance interaction at these interfaces is vital" to an effective future for nutrition education.

43. WHITEHEAD, F.E. Nutrition education research. World Review of Nutrition and Dietetics, vol. 17, 1973, pp. 91-149.

This exhaustive review begins by justifying the need for nutrition education by noting that each new generation must be taught to use an existing food supply intelligently, and that the body of facts which makes up the science of nutrition is evolving. The article by McKenzie and Mumford (entry 379) is critiqued. The review of the literature includes research on nutrition education's effects on dietary habits, including studies from 1900 to 1970; the author assumes that certain reports have not been extensively reviewed and that a comprehensive review of the literature is a logical first step toward developing a method to use in evaluating the effectiveness of nutrition education. Indeed, one of the most successful programs reviewed was described in 1910; it provided incentives for children to participate in a weight-monitoring and improvement project, which included home visits, group work, family participation, and supplementary meals, all of which are among the intervention components still promoted. The author provides an extensive summary and analysis of the literature reviewed. The bibliography includes over 250 references.

44. WHO. International Code of Marketing of Breast-milk Substitutes. Geneva, World Health Organization, 1981. 36p.

This Code represents WHO guidelines on the appropriate use and promotion of infant formulas. Articles specifically cover the roles of health care systems, manufacturers' responsibilities, food standards, labelling and quality standards, and the proposed implementation and monitoring of the Code. Since its publication, most nations have adopted the exact recommended Code or variations of it, in an effort to control increasing use of bottle feeding in the place of breast feeding throughout the world.

45. ABŪ ŠAQRĀ, Ḡ. *Milaff at-tarbiya al-ğiḏā'iyya wa-ăt-taṯqīf al-ğiḏā'ī wa-ṣiḥḥat al-ğiḏā' fī ăl-waṭan al-ᶜarabī*. [A dossier on nutrition education and training and correct nutrition in the Arab world]. Bārīs, Maktab al-yūnaskū al-iqlīmī li-ăt-tarbiya fī duwal al-ᶜarabiyya, 1984. 155p.

A dossier compiled by the Unesco expert for environmental education in the Arab States and consisting of four documents on nutrition training and its place in the biology curriculum, malnutrition and its influences on health, the body and the mind, nutrition education and its relation to the curriculum, and the supply of food and its consumption in the Arab world.

46. ATTITUDE THEORY AND MEASUREMENT IN FOOD AND NUTRITION RESEARCH: PROCEEDINGS OF A SYMPOSIUM, 15-17 JUNE 1980. University Park, Pennsylvania, The Pennsylvania State University, 1981. 76p.

This symposium was held to explore the role of attitudes in the formation and maintenance of food habits, and to review the methodology used in studying these issues. Contributors from fields of applied nutrition, food science, consumer behavior, rural sociology, psychology, and home economics discussed the formation and change of attitudes and the use of attitude assessment in understanding consumer behavior.

47. BADOUAL, J.; FRANCOUAL, C.; CALDERA, R. *L'alimentation infantile. Table ronde. Paris, 1982*. *Entretiens de Bichat. Thérapeutique*, 1982, pp. 307-311.

48. BARKER, L. ed. *The Psychobiology of Human Food Selection*. Westport, Connecticut, AVI Publishing Co., 1982. 262p.

49. BERGGREN, W.L.; MURRAY, G.F. *Consultant Report for Cameroon (March 9-21, 1981; The Feeding of Infants in Northern Cameroon: Guidelines for a Field Study*. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1981.

Planners and policy makers have recognized the value of including anthropological perspectives in their project development but have lacked guidelines for developing appropriate information bases. This team developed a survey instrument and a methodological approach that blends anthropometrics, socioeconomic indicators, and observed behavior. Although the model was developed in response to a government request for assistance in addressing a particular child nutrition problem, it can serve as a basis or model for development of further surveys to determine factors related to nutrition problems to serve as bases on which to plan appropriate nutrition policies and programs. The report describes the conceptual framework and hypothesis, presents the research design and data analysis, and recommends specific administrative decisions to be made immediately.

50. BOURNE, G.H., ed. Nutrition education and modern concepts of food assimilation. *World Review of Nutrition and Dietetics*, vol. 40, 1982, pp. 1-192.

51. BRYAN, M.S.; LOWENBURG, M.E. The father's influence on young children's food preferences. *Journal of the American Dietetics Association*, vol. 34, 1958, pp. 30-35.

52. BURT, J.V; HERTZLER, A.A. Parental influence on the child's food preference. *Journal of Nutrition Education*, vol. 10, 1978, p. 127.

53. CAMPBELL-LINDZEY, S. *Consultant Report for Sudan/Madagascar (May 6-30, 1983): Development of a Nutrition Education Strategy in Each Country for a Seventh Day Adventist World Service (SAWS) Ministry of Health PL-480 Title II Program*. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1983. 48p.

SAWS is committed to integrating nutrition education into its PL-480 feeding program to improve their impact. The consultant, as part of a three-person team, spent two weeks in each country, working with local officials and SAWS staff to analyse the programs and local nutrition needs and resources. The resulting recommendations for program development focus on specific behavior change objectives. Each country report also presents a summary of the overall program.

54. CENTRE INTERNATIONAL DE L'ENFANCE (CIE); OMS. *Symposium (International): L'Alimentation du Nourrisson et du Jeune Enfant. Strategies pour la Promotion de l'Allaitement Maternel*. Paris, CIE, 1981. 81p.

55. CERQUEIRA, M.T.; CASANUEVA, E.; FERRER, A.M.; FONTANOT, G.; CHAVEZ, A.; FLORES, R. A comparison of mass media techniques and a direct method for nutrition education in rural Mexico. *Journal of Nutrition Education*, vol. 11, no. 2, July-September 1979, p. 133-37.

Traditional, direct methods of nutrition education are not always feasible, especially in countries with limited resources. This study tested the effectiveness of mass media relative to direct, face-to-face nutrition education consisting of two two-hour sessions per week for three weeks. Nutrition knowledge improvements and nutrition status were similar for the two experimental groups, but the control group, which also listened to the radio, increased its consumption of food low in nutritive value. Thus, the radio campaign was as effective as intensive face-to-face education.

56. CHANDRASEKAR, U.; RAJALAKSHMI, R.; DEVADAS, R.P. Developing a nutrition education primer for adult literacy. *Indian Journal of Nutrition and Dietetics*, vol. 17, 1980, pp. 117-122.

Evening literacy classes for women were used as a vehicle for nutrition education. A primer containing nutrition education messages was developed after a test of women's knowledge and used in 48 classes for 22 women for 3 months. Nutrition knowledge improved significantly.

57. CHILDREN, TELEVISION ADVERTISEMENTS AND THE CONSUMPTION OF FOODS OF LOW NUTRITIONAL VALUE. Brisbane, Australia, Kelvin Grove College of Advanced Education, 1980. 236p.

58. CHRISTOPHER, C.; SHANNON, B.; SIMS, L.S. A multimedia approach to teaching nutrition. Journal of Nutrition Education, vol. 12, no. 1, January-March 1980, pp. 8-13.

59. CHURCH, M.; DOUGHTY, J. Value of traditional food practices in nutrition education. Journal of Human Nutrition, vol. 30, 1976, pp. 9-12.

Nutrition education in Western countries is usually restricted to imparting facts about food groups or specific nutrients. Without assessing the questionable effectiveness of this practice in its original locale, it is clear that it does not work in traditional societies. The socioeconomic and cultural background of food behavior must be considered; in traditional societies, foods are produced at the local level. They attain their own roles in the social and sensory aspects of people's lives. Food preparation follows particular customs. Nutrition education, to be effective, must take these local aspects into account and should try to meet its objectives through introducing a minimum of changes.

60. COMITE FRANCAIS D'EDUCATION POUR LA SANTE. La santé dans l'assiette. Paris, Comité d'Education pour la Santé, 1982. 40p.

61. CONSEIL DE L'EUROPE. Etude des methodes et moyens nécessaires à l'introduction et à la promotion de l'éducation nutritionnelle en milieu scolaire. Strasbourg, 1982.

This study is based on the results of a survey completed by members of the Conseil or by their experts. The first part is an analysis of the introduction of nutrition education into schools, motivating students, and developing curricula. The second part reviews the school cafeteria: its role, maintaining hygiene, the quality of the food, etc. A copy of the questionnaire is included, as well as a bibliography.

62. CONFERENCE SUR L'UTILIZATION DES MASS MEDIA DANS LE DOMAINE DE L'EDUCATION NUTRITIONNELLE. Rapport Définitif. Washington, D.C., Roy Littlejohn Associates, 1979. 62p.

This report presents the proceedings of a workshop held for nutrition educators from 9 francophone African countries. Practical guidance on the design and administration of mass media nutrition education campaigns was conducted through detailed orientation of case studies from Tunisia and group exercises and field work. The report includes participants' presentations of nutrition education activities in Burundi, Cameroon, Ivory Coast, Central African Empire, Mali, Mauritania, Niger, Rwanda, and Zaire.

63. CONTENTO, I. Children's thinking about food and eating--a Piagetian-based study. Journal of Nutrition Education, vol. 13, supplement 1, 1981, pp. S86-S90.

In the development of their rational abilities, children do not always categorize foods as adults would. The author studied the categorizations of foods by children 5 to 11 years old and found that as their age increased, their categorization of foods approached that of adults. She presents a table showing the categorizations in terms of Piaget's categories of preoperational and concrete operational thinking. Difficulties in teaching nutrition concepts to children therefore are not necessarily remedied by "better" teaching aids or more frequent instruction, but by organizing instruction to conform with children's abilities to understand. Nutrition education for children should include information and experiences from the real world that will help children distinguish between foods to avoid and foods to eat.

64. CONTENTO, I. Measuring and enhancing reasoning abilities of nutrition graduate students—a Piagetian appraoch. Journal of Nutrition Education, vol. 11, 1979, pp. 184-88.

65. CONTENTO, I. Thinking about nutrition education: What to teach, how to teach it, and what to measure. Teachers College Record, vol. 81, no. 4, summer 1980, pp. 421-447.

This article reviews the content, teaching methods, and evaluation criteria used in the United States, to guide educators in the selection of materials offered by commercial, government, and academic sources. Materials designed to convey facts are usually based on a nutrient-oriented approach, leaving food choices up to the learner, or on specific foods or food groups. Formal nutrition education, through the 1960s and 1970s, focused on information transfer only, while the food industry focused on promoting behavior change. Educators are now learning to promote behavior changes and to evaluate their programs not only on the basis of information gains, but also on attitude and behavior changes, and even on the ultimate goal of nutrition education, improvement of actual nutrition status. Recently designed materials also seem better suited to learners' developmental levels.

66. COOKE, T.M.; CARROL, G.; DE HAILS, P.A.; ZEITLIN, M.F. Consultant Report for Sierra Leone (April 27 - May 8, 1981): Report on the Anglophone African Regional Nutrition Education Workshop. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1981. 175p.

This workshop provided training in nutrition education materials development for representatives from 12 African countries. Participants were given an opportunity to learn, through "hands on" experiences, the processes of program management, message and materials design, pre-testing, and evaluation. Radio scripts, flip charts, and other materials developed during the workshop are included in the report. Participants also developed nutrition education project plans for each country, to be implemented upon their return.

67. CORNELL UNIVERSITY; OLSON, C.M.; GILLESPIE, A.H. Workshop: nutrition education research. Applying principles from Ithaca, 1980. Journal of Nutrition Education, vol. 13, no. 1, supplement, 1981, pp. S1-S118.

68. CUFFARO, C; SHYMKO, D.L. Games and audiovisual aids in preadolescent nutrition education. Journal of Nutrition Education, vol. 12, no. 3, July-September 1980, pp. 162-64.

69. DELAHAYE, M.C. L'éducation nutritionnelle adaptée au milieu. Développement et Santé, no. 33, June 1981, pp. 12-13.

70. DEVADAS, R.P.; CHANDRASEKHAR, U. Nutrition education of illiterate people. Journal of Nutrition Education, vol. 1, 1970, pp. 13-16.

This report presents an overview of nutrition techniques and programs that have been used in India, in the context of the extent and effects of India's malnutrition problems. Methods used have included demonstrations, plays, songs, films, discussion meetings, exhibitions, field strips, gardening activities, and cooking contests. The report compares their relative advantages, disadvantages, and effectiveness. Economic, social, and cultural conditions all must be considered in the design of intervention projects; effectiveness demands multifaceted approaches, using many channels, repetition of messages, and firsthand experiences.

71. DODDS, J.M. The handy five food guide. Journal of Nutrition Education, vol. 13, no. 2, June 1981, pp. 50-52.

72. DOKKUM, W.V. The application of magic as an audio-visual aid in nutrition education. Cajanus, vol. 11, no. 4, p. 235-41.

Magic tricks are one of many dramatic forms that can be used to emphasize or illustrate nutrition points. As a visual aid, magic has an audience-attracting aspect and can also be used to convey messages. For example, a trick might not work after the demonstrator consumes a beverage of low nutritive value; then the demonstrator drinks the beverage being promoted, and the trick works. The skill required is no greater than many other dramatic devices used in nutrition promotion. The author presents several examples in an informal context.

73. DRUMMOND, T. Using the Method of Paulo Freire in Nutrition Education: An Experimental Plan for Community Action in Northeast Brazil. Ithaca, New York, Division of Nutritional Sciences, College of Human Ecology, College of Agriculture and Life Sciences, Cornell University, 1975. 55p. (Cornell International Nutrition Monograph Series Number 3)

The author includes a generous amount of description of the philosophy of Freire, who was from Northeast Brazil. Oppressed peoples, such as the poor and hungry of this area, internalize the low opinion others hold of them; they become "things" owned by the oppressor. To regain their humanity, they must participate in a humanizing process, in which nutrition can play a large part. The desire for health and survival is undoubtedly a deep source of motivation for participation in the process of humanization. The development of consciousness can thus have a focus. The paper presents the author's experiences developing and applying this philosophy to her work in designing a nutrition program in a poor community.

74. ECOLE D'INFIRMIERES DE SAINT-OMER, PAS-DE-CALAIS. Des élèves infirmières entreprennent l'éducation alimentaire des petits. Revue de l'Infirmière, no. 19, 1981, pp. 63-67.

The Saint Omer School (Pas-de-Calais, France) operates under a philosophy of care that sees the nurse as a "health promoting agent." This article describes a nutrition education training experience conducted at the school in 1980.

75. EDEMA, J.M.P. Social phenomena and the planning of a nutrition education programme. Soc. Sci. Med., vol. 15A, 1981, p. 713-19.

Since the underlying purpose of nutrition education is to alter food consumption habits, it is useful for nutrition educators to examine the principles and guidelines of behavior change studies. This article presents the Behavior Modification Model of Van Beugen and uses data from case studies to formulate proposals for using social data in planning nutrition education programs. The process emphasizes the importance of stating clearly all underlying premises and examining the proposed project's impact on the overall condition of the audience. The planning process is presented schematically.

76. EIDE, W. B. Rethinking food and nutrition education under changing socio-economic conditions. Food and Nutrition Bulletin, vol. 2, no. 2, 1980, pp. 23-28.

This paper presents the proceedings of a workshop held in Tanzania in 1978 to get nutritionists to look at nutrition education as more than mere dissemination of information about good food and balanced diet. Educators should be aware that their role is more than pedagogical; they could play an important role in the formation of food and nutrition policies that could lead to real improvements in nutrition status. Malnutrition results not only from inadequate quantities of food, but also from inappropriate distribution of food and the means to produce and process it, at the international, national, local, and household levels. The report contains specific recommendations to the sponsor, the IUNS, for promoting interest and progress in nutrition education. Participants concluded that, although there is a continuing need for pedagogical work, other approaches are also needed. Nutritionists should broaden their perceived role to include influencing public and agency policies that affect nutrition status indirectly.

77. FALCK, V.T. Application of the behavioral sciences to nutrition education. Paper prepared for presentation at the Regional Counselor's Conference, Rice University, Houston, Texas, December 5, 1979, 13p.

Theoretical perspectives and problem-solving techniques derived from the behavioral sciences can be used to enhance the effectiveness of nutrition education. Nutrition education has had little demonstrable effect on food behavior for many reasons, including: (1) ambiguity surrounding the validity of nutrition information; (2) limited involvement of other professions, such as psychology; (3) lack of adequate funding and public support; and (4) cultural attitudes and values. Multi-disciplinary approaches would help both conceptually and methodologically, for example, in making food labels useful and understandable. Behaviorally-oriented multidisciplinary projects have had effects on dietary habits: one project focused on reducing heart disease by increasing availability and encouraging consumption of low-fat foods; others used a systems approach involving assessment of the needs of a population and social and psychological determinants of food choices.

78. FARM RADIO BROADCASTING: PLAYING A KEY ROLE IN DEVELOPMENT. Agricultural Information Development Bulletin, vol. 2, no. 4, December 1980, pp. 2-16.

Radio has been used in several Asian countries to promote food and agricultural awareness. The Economic and Social Commission for Asia and the Pacific developed "Regional Cooperation on Farm Broadcasting" and country project descriptions are provided. Discussion of the current and potential impacts of farm radio broadcasting includes descriptions of projects in Bangladesh, Malaysia, and the Philippines. Case studies present the economic success of a Thai farmer aided by government agricultural information services, and the use of drama in Papua New Guinea to stimulate awareness and discussion of agricultural issues.

79. FINCH, I.E. Everyday meal-choosing systems for the U.K., judged by educational, psychological, and nutritional criteria. Journal of Human Nutrition, vol. 35, 1981, pp. 106-17.

80. FLEMING, P.L.; BROWN, J.E. Using market research approaches in nutrition education. Journal of Nutrition Education, vol. 13, no. 1, March 1981, pp. 4-5.

This informal paper points out the principles of consumer research that are frequently ignored by designers of nutrition education programs and materials, which often fail because they are inappropriate. Educators should consider audience concerns, understanding, interests, and priorities. For example, if a group is found to value organoleptic factors over healthiness in choosing foods, a campaign would be better-off in emphasizing the tastiness of nutritious foods, rather than their health benefits. Formative and summative evaluations will contribute to the development of the field. Although nutrition educators often cannot deliver the messages audiences want to hear--they often must try to change deeply held beliefs and habits--they can work with their audiences to present their messages in the manner most likely to be effective.

81. FONDATION FRANCIASE POUR LA NUTRITION; CENTRE INTERNATIONAL DE L'ENFANCE. Séminaire de Réflexion Pedagogique sur l'Enseignement de la Nutrition aux Etudiants en Medecine. Paris, Fondation Francaise pour la Nutrition, 1981.

82. FOREYT, J.P.; SCOTT, L.W.; GOTTO, A.M. Weight control and nutrition education programs in occupational settings. Public Health Reports, vol. 95, no. 2, March-April 1980, pp. 127-136.

Vague dietary guidelines about the recommended proportions of fat and salt in the diet are rarely translated into actionable recommendations. Behavior modification principles were used in weight loss programs in a variety of settings, including the military and large corporations, to review specific techniques and their application. Specific strategies included: (1) self-monitoring of weight and eating; (2) stimulus control: altering access to food; (3) eating more slowly; and (4) contingency management using a reinforcement system and a formal contract. The structures, criteria for participation, and rates of success varied for the several programs. Future work should focus on cost-effectiveness, attrition, follow-up, confounding variables, and collection of pre- and post-treatment data.

83. FRANCOIS, A. L'éducation nutritionnelle. Bibl. Nutr. Dieta, vol. 28, 1979, pp. 213-220.

Nutrition education should be considered a part of nutrition policy and should be included in the elementary curriculum. The paper presents discussions of the determinants of nutrition behavior, the various channels through which nutrition-related information can be disseminated, and the need to use as many channels as possible. Messages are most likely to be effective if they are objective and consistent.

84. FUGLESANG, A. About Understanding: Ideas and observations on cross-cultural communications. New York, Decade Media Books, Inc., 1982. 231p.

Aristotle and other Westerners exhibit arrogance in believing there is but one set of logical principles, one set of developmental standards. The author, an authority on information, cross-cultural communication, and adult education in Third World countries, discusses his experiences with "illiterate" people, mostly in Africa, with many examples drawn from nutrition education projects. We must rethink some of our basic assumptions about language, learning, and understanding; the starting point in a western conceptual model may be wrong. We should begin with a search for other models. People in other cultures may have useful ways of communicating, of which we are unaware. It is possible that one cannot describe or understand another culture without using its own language.

85. GIBSON, L.D. The psychology of food: Why we eat what we eat when we eat it. Food Technology, vol. 35, no. 2, February 1981, pp. 54-56.

Dietary behavior is influenced by social, economic, and emotional factors. Traditional determinants of food habits include ethnicity, regionality, and learned habits; current concerns also include time constraints, concern for the environment, and interaction with the many emotional meanings of food, such as status, hospitality, and security. The paper discusses studies of U.S. food behavior and its determinants; individual motivations, rather than group forces, are expected to play the determining role in American food consumption decisions.

86. GILLESPIE, A. Applying communication theory in nutrition education research. Journal of Nutrition Education, vol. 13, supplement, 1981, pp. S29-S31.

Research in nutrition communications is in its early stages. Researchers should not try to do the equivalent of trying to determine all the nutrient requirements in one experiment; they must not expect great advances in a short time or from a single experiment. A great deal of longitudinal study will be required to determine long-term effects of communications, just as longitudinal studies are needed to determine long-term effects of nutrient intakes. The author offers a model for nutrition communication research and discusses the problems of comprehensiveness vs. real-world constraints, laboratory vs. field research, and problems in measuring change.

87. GRIFFITHS, M. Consultant Report for Indonesia (February 9 - March 1, 1981): Strategy for Nutrition Education Intervention Component of the Vitamin A Deficiency Control Project. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1981. 41p.

The blindness prevention programs of Helen Keller International include an Indonesian project to increase consumption of vitamin A. The overall strategy includes distribution of capsules of vitamin A, motivation, training, and community education. This report outlines the appropriate materials for each target group and a plan of operations with specific outputs and timetables. Recommended activities include intersectoral meetings to develop implementation strategies, specific staffing levels, conducting of workshops for community materials development, and development of an evaluation and plan for the future of the program.

88. GROGAN, J. Teacher inservice for nutrition education--an interdisciplinary approach in the school system. Journal of Nutrition Education, vol. 10, 1978, p. 119.

89. GUSSOW, J.D., ed. Learning and eating; the new nutrition education. Teachers College Record, vol. 81, no. 4, 1980. 124p.

90. GUSSOW, J. Some impractical thoughts on television and nutrition education. Food Monitor, November/December 1980, pp. 10-13.

Mass media nutrition education in a society plagued by overconsumption must promote self-restraint, which is counter not only to the vast time alloted to food advertising, but to advertising and most television programming in general. Food advertising promotes ideas counter to those children most need: where food comes from, how it grows, and how to select a balanced and healthy diet. Television is not very good at dealing with complex issues such as the slow cycles of nature and our dependence on it; its nature is to separate watchers from real experience. The author concludes by wondering whether the best nutrition education might be to run a televised gardening program continuously—and when people get tired of it, they might go out and do some work in the soil.

91. GUTHRIE, H.A.; SCHEER, J.C. Nutritional adequacy of self-selected diets that satisfy the four food groups guide. Journal of Nutrition Education, vol. 13, no. 2, June 1981, pp. 46-49.

Dietary records were analyzed for their adequacy in terms of both the U.S. four food groups and the Recommended Daily Allowances of 15 nutrients. Diets that met the food groups criteria often did not satisfy the RDAs, although they met 80% of the RDAs for all nutrients. If the goal of a food guide is to assure an intake equal of the RDAs, a modification of the four food groups guide is needed; only one-third of the subjects meeting the four food group criteria met the RDAs for iron, zinc, and vitamins E and B6.

92. HOCHBAUM, G. Strategies and their rationale for changing people's eating habits. Journal of Nutrition Education, vol. 13, supplement, 1981, pp. 59-65.

93. HORNIK, R.; SOLOMON, D. The Role of Communication in Nutrition. Stanford, California, Institute for Communication Research, Stanford University, 1978. 109p.

This paper summarizes support for USAID's effort to turn from a limited concept of nutrition education as face-to-face transmission of nutrition knowledge to a broader concept of nutrition education as an activity aimed at changing behavior, often most effectively accomplished through mass media activities. In improving programs, it is first necessary to determine the desired outcome and whether it is to be achieved through education alone, or together with the introduction of some new resource. The character of the audience will also affect strategy decisions. The paper reviews types of outcomes likely to be sought and describes nine nutrition communication strategies, categorized as mass-communication, interpersonal communication, or combinations. The paper concludes that nutrition communications is still at the experimental stage but is worth investigating further, through both evaluation of ongoing projects and adding tests to activities in the planning stages.

94. ISRAEL, R.C., ed. Using Communications to Solve Nutrition Problems. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, in press.

This compendium of papers by experts in many fields related to nutrition communications presents a variety of perspectives on the vital role communications can play in improving nutrition status. It includes case studies on nutrition education projects in Bangladesh, Brazil, Bolivia, the Congo, Indonesia, and Morocco; and analytical articles on working with traditional dietary belief systems, message design, materials development, the use of advertising agencies for nutrition education, new tools for assessing dietary intake, and nutrition education evaluation.

95. ISRAEL, R.; ZEITLIN, M.F. Consultant Report for Ghana (September 12-19, 1982): A Workshop on How to Adapt Prototype Nutrition Education Materials. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1982. 10p.

The World Health Organization has published Guidelines for the Training in Nutrition of Community Health Workers, an excellent technical frame of reference for nutritionists, trainers, and curriculum developers. As a prototype, it is to be used in the next step, development of primary health care nutrition training materials as a series of village-based modules, geared to the current levels of knowledge, skills, and time constraints for health workers. This report presents the results of a workshop held to implement this step; it presents three prototype Ghanaian-specific village modules as examples of the kinds of supplemental curricula to be designed.

96. JANI, S.N.; JANI, L.A. Nutritional tools for LD teachers. Acad. Ther., vol. 14, no. 2, 1978, pp. 165-77.

97. KALLEL, Z; MAHJOUB, A.; MEZHOUD, F.; BAHRI, A.M.; BEN ALI, C. Education nutritionnelle de l'enfant. Revue Tun. Ped., vol. 3, 1979, p. 199-206.

Good nutrition is essential for early child development, but many Tunisian children, particularly those under 3 years old, are undernourished or have problems such as anemia or rickets. This article presents the nutritional status of children in age groups up through school age, including social commentary on causes, and notes the need for nutrition education of mothers. Physical and psychomotor development monitoring are outlined.

98. KIDD, R.; KUMAR, K. Co-opting Freire: A Critical Analysis of Pseudo-Freirean Adult Education. International Foundation for Development Alternatives, Dossier 24, July/August 1981.

99. KING, J.C.; et al. Evaluation and modification of the basic four food guide. Journal of Nutrition Education, vol. 10, 1978, p. 27.

100. LACHANCE, P.A. A suggestion on food guides and dietary guidelines. Journal of Nutrition Education, vol. 13, no. 2, June 1981, p. 56.

101. LARSON, L.B.; MASSOTH, D.M.; CHASE, H.P. Using the discovery method in teaching nutrition. Ecology of Food and Nutrition, vol. 3, 1974, pp. 179-183.

The discovery method was applied to the training of nutrition aides for nutrition education of migrant workers. Aides studied their own dietary habits and devised ways to increase their own consumption of specific foods, without increasing their expenditures. Thus, they "discovered" the basic principles of a well-balanced diet. They then translated their experiences into drawings to be used with migrant Mexican workers. They had acquired motivation through their own experiences to transfer the motivation and information to others.

102. LESLIE, J. The use of mass media in health education campaigns. Educational Broadcasting International, vol. 11, no. 3, 1978, pp. 136-142.

Mass media, especially newspapers and radio, reach large portions of the population in many developing countries and represent the most efficient means of reaching large audiences. This paper presents a review of 9 projects in which the mass media have been used to promote health and nutrition messages in low-income countries. Two tables present the projects' major features, such as name, media used, duration, target audience and major messages, and evaluation results in terms of outreach, attainment of educational objectives, effects on health status, and costs. Comparison is difficult, since criteria differed, but most projects did reach large audiences at relatively low costs. The results indicate, although not conclusively, that specific messages can enable audiences to modify their behavior and that this modified behavior could improve health or nutrition status of the community.

103. LEVY, S.R.; IVERSON, B.K.; WALBERG, H.J. Nutrition education research: an interdisciplinary evaluation and review. Health Education Quarterly, vol. 7, 1980, pp. 107-26.

104. LOVE, R.; KALNIS, I. Individualist and structuralist perspectives on nutrition education for Canadian children. Soc. Sci., vol. 18, no. 3, 1984, pp. 199-204.

The individualist perspective in health education focuses on lifestyle change; the structuralist perspective focuses on changing socioeconomic conditions seen as underlying nutrition problems. The two perspectives are compared in the context of nutrition education for Canadian children, with respect to (1) the roots of poor health, (2) appropriate strategies for health programs, and (3) the training and subsequent role of the health educator in health promotion. The authors discuss the conflicts between the perspectives and suggest that a synthesis is needed if progressive health promotion is to occur.

105. MANOFF, R.K. New tool for nutrition education: Advertising technique. Ceres, vol. 16, no. 2, March-April 1983, p. 40-43. [Also published in Spanish and French]

Using examples from a campaign in the Philippines, the author presents the principles of marketing research and development as they can be applied to nutrition communications. Key activities not usually included in nutrition program development that could make a difference include the use of focus groups rather than fixed questionnaires; uncovering resistance points to the desired behavioral change; designing the behavioral message to overcome the specific points of resistance; pretesting the message for comprehension, believability, receptivity, actionability, and motivation; and tracking the campaign's impact and revising it as necessary to enhance impact.

106. MANOFF, R.K. The effective use of mass media in nutrition education. PAG Bull., vol. 4, no. 1, 1974, pp. 12-17.

The "reach-and-frequency" technique consists of planting brief messages into and between other programming. Mass media assure broad outreach, control of message delivery, and influence over large groups. They also enhance other means employed in nutrition education. Success of a campaign depends on the message content, which therefore must be developed with utmost care. Testing must be conducted to assure that the messages are understood and that they convey the message they should. Limitations and counterindications include food shortages, language difficulties, and inadequate income to implement the recommended change.

107. MCNAUGHTON, J. Les programmes d'intervention nutritionnelle: pièges et potentialites. Ceres, vol. 16, no. 2, March-April 1983, p. 28-33.

Nutrition education, among all nutrition interventions, has the most potential and yet is the most often misapplied. This article informally reviews the role of various nutrition interventions in the improvement of children's nutrition status. Nutrition education often fails because it ignores good communications principles, or because it is applied to inappropriate situations, such as lack of access to needed foods. It is especially important to reach mothers with nutrition education, because of their impact on both the health and the future food habits of their children, and to reach school children, while they are still forming their lifelong habits of health and eating.

108. NESTOR, J.P.; GLOTZER, J.A., eds. Teaching Nutrition: A Review of Programs and Research. Cambridge, Massachusetts, Abt Books, 1981.

The United States established the national Nutrition Education and Training Program in 1979; as part of its first evaluation, a literature search of nutrition education programs and research was compiled. This book presents the findings of the search, for children of preschool, elementary, and high school age; for teachers; and for school food service personnel. Additional chapters present the state of the art in evaluation of nutrition education programs, and a conceptual framework for nutrition education, focusing on the knowledge-attitude-behavior-status format, but noting that the relations among the stages are not causal. The major findings of the book are that nutrition education, at that time, was not a well-organized field and was in need of sound methodological guidelines for program development and evaluation; and that a vast variety of programs and agencies operating nutrition education programs were in need of coordination and organization.

109. NICHTER, M; NICHTER, M. An Athropological Approach to Nutrition Education. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1981. 117p. bibl.

Although guidelines for nutrition education admonish educators to take local food beliefs into account, there has been little guidance on how to accomplish this. This paper presents a methodology for determining local conceptual models for food and nutrition, and suggestions for educators desiring to work within the existing food system, rather than working outside it or counter to it. The paper presents major food and nutrition conceptual models identified by the authors, particularly in India. The "Community Diagnosis Methodology" is presented in detail in an appendix that includes specific questions to ask in the field; the system incorporates principles of participatory research and social marketing techniques.

110. NON-FORMAL EDUCATION INFORMATION CENTER. Children: Health, Education, and Change. A Selected, Annotated Bibliography. East Lansing, Michigan, Non-formal Education Information Center, College of Education, Michigan State University, 1981. 40p. (Annotated Bibliography #6)

Sections of this bibliography include: education and child development; issues and policies in children's projects and educational programs; primary health care; fighting hunger, malnutrition, and infant mortality; journals, newletters, special issues, and bibliographies; and late acquisitions. The section on hunger includes references from developing countries.

111. NON-FORMAL EDUCATION INFORMATION CENTER. Non-Formal Education and Health: A Selected, Annotated Bibliography. East Lansing, Michigan, Non-formal Education Information Center, College of Education, Michigan State University, 1981. 56p. (Annotated Bibliography #2)

This annotated bibliography includes sections on health education and on nutrition and health.

112. OFICINA REGIONAL PARA EUROPA. Enciclopedia Salvat de la Salud. Tomo 1: Alimentación y Salud. Pamplona, Salvat S.H. de Ediciones, 1981.

113. OLSON, C.M.; GILLESPIE, A., eds. Proceedings of the workshop on nutrition education research. Journal of Nutrition Education, vol. 13, no. 1, supplement 1, 1981, 118p.

114. OLSON, L.K.; REDICAN, K.J.; KRUS, P.H. The school health curriculum project: a review of research studies. Health Education, January/February, 1980, p. 16.

115. PARLATO, R. *Consultant Report for India (June 16 - July 18, 1982): Design for the Nutrition and Health Education Component of USAID/India's Integrated Maternal and Child Nutrition Project*. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1982. 57p.

This report presents the consultant's work in the nutrition/health education (NHED) portion of the Integrated Child Development Scheme (ICDS), including: (1) an evaluation of the NHED effort within the existing ICDS program, based on government data and discussions with ICDS officials; (2) a review of major issues concerning NHED, such as lack of planning, lack of full utilization of resources, and insufficient community participation; (3) a program analysis, critically reviewing all national institutions within ICDS and state ICDS operations in Gujarat and Maharashtra; (4) design of a renewed project to remedy problems identified through the processes described above; and (5) a budget for the project. Guidelines set out by the Ministry of Social Welfare state that NHED is to provide education to all women of childbearing age, and to provide followup to mothers whose children are malnourished or frequently ill. The key person in this process is the *anganwadi* worker in the community, who conducts the face-to-face education.

116. PETERS, J. Teaching nutrition in schools: do our students practice what we teach? *Cajanus*, vol. 13, no. 2, p. 77-84.

Research has demonstrated that improving students' nutrition knowledge does not necessarily lead to improvements in their nutrition attitudes or practices. To improve the effectiveness of nutrition teaching, the following factors should be considered: the students' own perceptions of their nutrition problems, student action and involvement in the principles taught (for example, conducting their own nutrition status survey), and presenting information that the students will see as useful and relevant to their lives. Much of the "education" students receive is mass media promotion of foods of questionable nutritional value; nutrition educators must also use the media to counteract this negative influence.

117. PLAT, P. Habitudes alimentaires et education nutritionnelle. [Food Habits and Nutritional Education], *Vie Medicale au Canada Francais*, vol. 10, no. 3, March 1981, pp. 232-42.

118. RAIMBAULT, A.M. *Nutrition Education of pre-school children; Suggestions to teachers and parents: Aids to programming UNICEF assistance to education.* Paris, UNESCO Unit for Cooperation with UNICEF and WFP. November 1981, 10p.

Children acquire lifelong habits at an early age; the early introduction of principles of health and hygiene is therefore crucial, both at home and at school. This paper presents not only a listing of the principles children should master at an early age. Nutrition education should not be a supplementary activity but should be integrated with other activities, such as language skills, games, and sensory experiences. The basic goal must be to increase children's awareness and to enable them to eat well and consume local products. Examples of useful games and activities are provided.

119. RAMSEY, C.E.; CLOYD, M. Multiple objectives and the success of educational programs. Journal of Nutrition Education, vol. 11, 1979, p. 141.

120. REDMAN, B.J. Consumer Behavior: Theory and Applications. Westport, Connecticut, AVI Publishing Company, Inc., 1979. 253 p. bibl.

This work, designed for economists, fuses various social science approaches to the theory and practice of consumer behavior. Included are Cattell's "factor analysis approach," Dollard and Miller's "social learning approach," and Roger's "humanistic" approach. The case study of social influences on the "dieting consumer" examines the roles of reference groups and of self-concepts in determining dietary practices.

121. RITCHIE, J.A.S. Combler la lacune--quelques problèmes de communication et d'empathie auxquels se heurte l'éducation nutritionnelle. Aliment. Nutr., vol. 5, 1979, pp. 11-19.

Nutrition education has had little impact on malnutrition, for a number of reasons. In addition to socioeconomic and organizational causes, the background, selection, training, and use of nutrition educators themselves is often inappropriate. Many are not sufficiently familiar with the populations they are supposed to serve and cannot or will not bridge that gap. The education they try to give is thus not suited to local conditions and to the basic needs and perceptions of the target population. The author makes several recommendations for improving nutrition educators' preparation for their role.

122. SANTOS, W.; et al. Nutrition Education and Food Science Technology. New York, Plenum Press, 1980. 950p.

This is the second of three volumes of proceedings of the Eleventh International Congress of Nutrition, held in 1978. Among the papers on nutrition education are descriptions of programs and projects in Israel, the Philippines, the Netherlands, the United Kingdom, and Tanzania. Other presentations examine evaluation issues, appropriate nutrition education goals for developing countries, and training for special groups such as medical personnel, health workers, and community nutritionists.

123. SEVENHUYSEN, G.P. Informal nutrition education: thoughts on its use. Food and Nutrition, vol. 4, no. 1-2, 1978, pp. 25-26.

Information about nutrition is not sufficient to change nutrition behavior; motivation is also essential. Designing a motivation program depends on understanding the priorities and concerns of the population addressed;

Freire's methodology calls for the educator to accept the concerns of the community as paramount. Economic or convenience concerns may outweigh nutritional awareness, and a program cannot be successful without taking these into account. Nutrition education messages should be brief, directed to the concerns of the community, and educators should consult local professionals in related fields, such as agriculture, in learning about the community.

124. SHACK, K.W., ed. Teaching Nutrition in Developing Countries. Meals for Millions Foundation, 1977. 193p.

This book presents papers from a workshop conducted to establish principles and guidelines for participatory nutrition education in developing countries, to promote recognition that malnutrition is not due only to lack of nutrition information. Communities must be involved in identifying their own problems and the solutions to them. Case studies from Africa, Asia, and Central America describe the integrated approach to nutrition education, training nutritionists, mass media approaches, educational tools, and directions for evaluation of nutrition education projects. The self-reliance principles of Paulo Freire are relied upon throughout.

125. SINGER, E.A. Folklore for nutrition education. Journal of Nutrition Education, vol. 14, no. 1, March 1982, pp. 12-13.

126. STANFIELD, J.P. Improving child nutrition at the village level. Child Care, Health and Development, vol. 7, no. 2, March-April 1981, pp. 85-89.

127. SWEENEY, W.O. Using Radio for Primary Health Care. Washington D.C., American Public Health Association, 1982. 56p. bibl. (Primary Health Care Issues, series 1, no. 1)

The authors reviewed 88 media projects and selected 47 for detailed presentation and analysis, based on relevance and completeness of the information available. Charts and tables present the activities of the projects so they can be compared. The authors conclude that carefully designed and targeted programs can provide useful information, promote the use of health products and services, aid in participatory process, and produce results including change and action. The second part presents guidelines for development of radio projects, based on the lessons illustrated in the cases reviewed. Appendices present 47 project summaries and a list of USAID resources for field support of radio projects.

128. THE USE OF MASS MEDIA IN FOOD AND NUTRITION PROGRAMMES: GUIDELINES FOR PLANNERS AND DECISION MAKERS. Kingston, Jamaica, Caribbean Food and Nutrition Institute, Pan American Health Organization, 1978. 32p.

This document concisely presents guidelines on problem identification, coordination of program planning, problem analysis, formulation of objectives, identification of audience characteristics, message design, media selection, research, and evaluation. In addition to a detailed description of this process, the report includes lists of training and research needs, proposals for action, and reports on recent nutrition education development activities in the region.

129. TRAGLER, A.T.; BHATT, S.S.; FERNANDEZ, A. Assessment of health education in nutrition. Journal of Tropical Pediatrics, vol. 27, no. 4, August 1981, pp. 221-223.

130. VESIN, P.; AGHI, M.; MOREL, G., eds. Child Nutrition/Malnutrition Information and Mass Media: A Workshop held at the Film and TV Institute of India, January 28-February 1, 1982. Paris, The International Children's Centre, 1983. 176p.

The papers presented at this conference include several case studies of pilot projects or experiments in the effectiveness of nutrition education interventions in various locations and contexts in India. Descriptions include methodologies and details of implementation, such as training programs and educational materials developed, as well as evaluations of the programs' effectiveness. Other papers present guidance on the use and development of mass media activities and sample televison and radio scripts produced by conference working groups.

131. WHEELER, E.F. Teaching nutrition in schools: Can real data be used? Human Nutrition: Applied Nutrition, vol. 36A, 1982, pp. 11-17.

This article presents status, risk, and trend information derived from British nutrition surveys and proposes that an excellent avenue for disseminating this information to the general public is through secondary-school-level students. They are aware of existing publicity about the survey findings and are usually eager to help promote the public welfare. At this stage in their lives, they are forming lifelong habits in nutrition. School-based nutrition education can put nutrition problems into their social and economic contexts through classroom discussion, to promote further public awareness and understanding of nutrition problems and their underlying causes.

132. WHO. Guidelines for Developing Strategies to Promote Successful Breastfeeding. Report of a Technical Group Meeting, Barbados, 1979. 26p. (MCH/RW/BF/79.1)

These guidelines were developed by a group of experts selected for their knowledge, experience, and concern about breast feeding. Guidelines cover areas in health, including hospital policies that encourage breast feeding; legislation and national planning policies; and education of professionals and the general public. Further information is needed on the knowledge, attitudes, and practices of health professionals; on maternal nutrition; and on the value of the mass media in promoting breast feeding. Appendices describe the physiology of breast feeding, perinatal practices interfering with lactation, and modifications in health services to avoid such interference.

133. WHO. Infant and Young Child Feeding: Current Issues. Geneva, WHO, 1981, 114p.

134. WHO National Workshop for the Promotion of Breastfeeding, Nigeria, 26-29 November 1979. 11p. (MCH/NW/BF/79.2)

Representatives from 4 African nations convened to discuss the issue of breast feeding and the status of women and to propose steps towards improving the status of infant and young child feeding. In the context of decreasing breast feeding rates and a rapidly changing society and health services, recommendations were made in the areas of health services, social legislation, weaning foods, the infant food industry, mass media and the promotion of breast feeding, the status of women, and the role of the government in safeguarding child nutrition.

135. WHO. Report of a Regional Workshop for the Promotion of Breastfeeding, Brazil, 4-7 September 1978. 29p. (MCH/RW/BF/78.1)

The World Health Organization convened this workshop for representatives from eight countries that had expressed interest in developing national programs to promote breast feeding and reverse the trend away from breast feeding. Tables present current information on the status of breast feeding practices in the eight countries, including reasons given for early weaning. Working groups developed guidelines for research, legislation, training health professionals, and the roles of the health sector and of education in promotion of breast feeding. Education should include formal education in the health sector and the population in general, and informal public education, including the mass media, since public support, including the support of fathers, is essential.

136. WIGHT, J.A. Non-formal nutrition education for rural development in Latin America. Arch. Latinoam. Nutr., vol. 27, no. 3, 1977, pp. 285-293.

Nonformal education programs should take into account the nutritional and sanitation needs of the rural populations they address. Rural teachers and educational agents can use nonformal education to improve the nutritional status, family health, and social development of their communities. Nonformal instruction can reinforce formal education of the schools.

137. WODARSKI, L.A.; et al. Teaching nutrition by teams-games-tournaments. Journal of Nutrition Education, vol. 12, 1980, p. 61.

138. YARBOROUGH, P. Communication theory and nutrition education research. Journal of Nutrition Education, vol. 13, supplement, 1981, pp. S16-S27.

This paper outlines three of the many perspectives on communications theory and briefly provides applications to nutrition education research. Communications theories are based primarily on established social sciences, notably psychology and sociology. Forty years of research has yielded a variety of perspectives and theories. The communications effects perspective probably has the greatest potential for evaluating the short-term effects of educational efforts, but the social relationships perspective, especially adoption-diffusion concepts, should allow for longer-term program evaluation. The programatic perspective reminds us that communications is an ongoing, dynamic, and reciprocal process. It is probably the most directly applicable to cases of ongoing face-to-face communications.

139. ZEITLIN, M.F.; FORMACION, C.S. Nutrition Intervention in Developing Countries; Study II: Nutrition Education. Prepared by the Harvard Institute for International Development for Office of Nutrition, U.S. Agency for International Development. Cambridge, Massachusetts, Oelgeschlager, Gunn & Hain, Publishers, 1981. 349p.

This volume presents thorough discussions of the role of nutrition education as an independent intervention and as part of other interventions; its forms and usage; elements of intervention design; the channels for transmitting nutritional advice and for teaching new behaviors; and evaluation, in terms of cost and technical considerations. The final section presents a detailed case study of a Philippine radio campaign to teach enrichment of rice porridge used as a weaning food. The case study includes a detailed discussion and analysis of the campaign's background, design, and evaluation.

III: Baseline Information and Ethnographies

140. ANANTHARAMAN, K. Report (Final): Nutrition and Food Conditions of the Child in the African Family, Inter-African Seminar, Dakar, 1980. Paris, International Union of Family Organizations, 1982, 74p.

141. A SUMMARY REPORT ON U.S. CONSUMERS' KNOWLEDGE, ATTITUDES AND PRACTICES ABOUT NUTRITION--1980. Minneapolis, General Mills, Nutrition and Marketing Research Departments, 1981. 45p.

142. BALDERSTON, J.B.; WILSON, A.B.; FREIRE, M.E.; SIMONEN, M.S. Malnourished Children of the Rural Poor: The Web of Food, Health, Education, Fertility, and Agricultural Production. Boston, Massachusetts, Auburn Publishing Company, 1981. 223p.

Although the interrelations of malnutrition, disease, education, income, and family size are commonly acknowledged, there is little understanding of how they interact. Such an understanding would contribute to the effective allocation of scarce resources; if hungry children cannot learn, an investment in education is wasted. The authors use data from Guatemala to examine the possible correlations. Among the conclusions and observations: parental literacy is correlated with quality of children's diets; high calorie intakes are positively correlated with school performance; children of lower birth order are more likely to be enrolled in school; when economic and family background factors are held constant, the size and health of the child are strongly correlated with participation and performance in school. Female literacy was correlated with decrease in fertility, after controlling for socioeconomic status. The authors conclude that education is crucial to the adoption of agricultural innovations and to the success of family planning programs. They present five types of program interventions and possible implementation combinations for different circumstances, to be determined by policy makers who, depending on their values, will have to decide on the right balance between competing criteria of equity and efficiency.

143. BIRCH, L.L. The relationship between children's food preferences and those of their parents. Journal of Nutrition Education, vol. 12, no. 1, January-March 1980, pp. 14-18.

144. COMMITTEE ON FOOD CONSUMPTION PATTERNS, FOOD AND NUTRITION BOARD, NATIONAL RESEARCH COUNCIL. Assessing Changing Food Consumption Patterns. Washington, D.C., National Academy Press, 1981. 284p.

This study examined existing means of determining U.S. food consumption patterns and nutritional status and proposes alternative methods for obtaining this data. The proposed system utilizes government and commercial sources of information to monitor status and dietary habits. A five-year cycle would reveal trends. Intake would be measured by 24-hour recalls; existing food composition data would be used; morbidity and mortality data would be the chosen health status indicators; the subjects studied would be stratified by age, physiological state, region, socioeconomic level, race, and ethnicity. Some anthropometric and biochemical measures of nutrition status would be taken, of a subsample. Background papers present method for collecting food consumption data, and nutrition and health status indicators.

145. DEN HARTOG, A.P. Urbanization, food habits and nutrition. World Review of Nutrition and Dietetics, vol. 38, 1981, pp. 133-152.

Urbanization is proceeding rapidly in developing countries, causing changes in population food habits and access and resulting in new nutrition problems. Urban migrants encounter problems with access to food, for it cannot be grown, and a cash income is required. Mothers, often forced by circumstances to seek paid work, are less likely to breast feed—resulting in infant malnutrition. Foods may be selected for their status or ease of preparation (due to lack of fuel) rather than nutritional value. Rural areas are in turn affected by the loss of able-bodied workers, and food production may decrease; urban ideas about food status are imported. Nevertheless, urban dwellers have some advantages: they do have a more varied diet than in rural areas; they are often ambitious and creative, open to new ideas. Successful programs often are undertaken on a self-help basis, but ultimately, long-term improvement depends on removal of the underlying causes of malnutrition.

146. DESAI, I.D.; SWANN, M.A.; GARCIA TAVARES, M.L.; et al. Nutritional Characteristics and Suggestions for Improvement of a Typical Peri-Urban Agricultural Migrant Worker's Diet in Southern Brazil. In Aspects of Human and National Nutrition. Paris, S. Karger, 1980. pp. 76-96.

147. DUGDALE, A.E.; CHANDLER, D.; BAGHURST, K. Knowledge and belief in nutrition. The American Journal of Clinical Nutrition, vol. 32, February 1979, p. 441-45.

Nutrition knowledge tests frequently require simple yes/no or true/false responses; these are easy to score but fail to measure the student's "perceived" knowledge. This study administered a test with three possible repsonses: yes, no, and don't know. The high level of incorrect responses reveals that those tested not only lacked correct information but possessed incorrect information that they relied upon. Since correcting fallacies is more difficult that providing information, nutrition educators have a difficult task in assisting the lay public in acquiring accurate nutrition knowledge. Most of those tested were physicians, medical students, or nursing students.

148. DUMLAO, M.F.; ONATE, L.U. Nutrition knowledge, attitudes and practices of public elementary school teachers in Los Baños, Laguna. Philippine Journal of Nutrition, vol. 33, no. 2, April-June 1980, pp. 108-117.

This study interviewed 198 teachers from 11 public elementary schools. The teachers were judged to be well-informed; a positive correlation was found between nutrition knowledge scores and those on attitudes and practices. Nearly all teachers used mass media as their principal source of nutrition information, but exposure was not correlated with increases in knowledge, attitude, or practice scores. Age, education, and teaching experience also were not correlated with any of the three measures. Previous nutrition training in high school was correlated with knowledge and attitudes but not with practices. All three measures were highly affected by in-service workshops, and not by college nutrition training.

149. DUTRA DE OLIVEIRA, J.E.; PILEGGI VINHA, V.H.; MOURA DUARTE, F.A. Researching preschool children through a community food program. Ecology of Food and Nutrition, vol. 9, no. 4, August 1980, pp. 223-228. bibl. [Also published in French and Spanish]

150. DWYER, J.T.; FELDMAN, J.J.; MAYER, J. Nutrition literacy of high school students. Journal of Nutrition Education, vol. 2, 1970, pp. 59-66.

151. EDEMA, J.M.P. Social phenomena and the planning of a nutrition education programme. Social Science and Medicine. Series A, vol. 15A, no. 5, September 1981, pp. 713-19, bibl.

152. EKEH, H.E. Some major obstacles to the practice of sound nutrition in Nigeria. International Journal of Health Education, vol. 23, no. 4, 1980, pp. 236-241.

Factors related to nutrition practices and the effects of nutrition education were investigated in Ibadan, Nigeria. Mothers were interviewed about their nutrition knowledge, feeding practices, water supply, cooking facilities, and other household background. Medical personnel from local health facilities provided information about children's health status and their perceptions of maternal habits. Although 90% of the mothers introduced feeding bottles within the first three months of life, only half knew how to keep them clean. Although nutrition knowledge was adequate, most did not provide adequate weaning diets. Medical personnel attributed the popularity of bottles to the influences of friends and commerical advertisements. Many food beliefs deleterious to child welfare were identified. The study provides specific suggestions for improving mothers' habits, such as adding powdered milk to the weaning food, a starchy gruel, to improve children's intakes safely. Other recommendations cover food storage and preparation and personnel training needs.

153. ENGBAEK, S.; FOLDSPANG, A. Fedmens epideminologi blandt skolebørn (The epidemology of over-weight among school children). Ugeskrift for laeger, vol. 143, 1981, pp. 701-706.

154. FAO. Bibliography of Food Consumption Surveys. Rome, Italy, Statistics Division, Economic and Social Policy Department, Food and Agriculture Organization of the United Nations, 1981. 85p. bibl. (FAO Food and Nutrition Paper No. 18)

This document presents the results and major features of houshold budget and food consumption surveys conducted in 85 countries between 1968 and 1978. The original sources for the information are provided. Part I presents a list, by region and country, of the surveys, giving the sources of the publications and a note on the general content, including main objectives, dates undertaken, scope and coverage of the survey, and main statistical results. Part II consists of a summary table listing the surveys as in Part I but giving their contents in a systematic and comparable form, covering type of survey, geographic areas and socieconomic groups studied, sample size, duration of the survey, and the nature of the results. The final columns present some details of the tabulated and analytical results of the surveys.

155. FITZGERALD, T.K., ed. Nutrition and Anthropology in Action. Assen, Amsterdam, Van Gorcum, 1977.

156. FOLY, C.; HERTZLER, A.A.; ANDERSON, H.L. Attitudes and food habits--a review. Journal of the American Dietetic Association, vol. 75, 1979, pp. 13-18.

157. GILLIS, D.E.G.; SABRY, J.H. Daycare teachers: Nutrition knowledge, opinions, and use of food. Journal of Nutrition Education, vol. 12, no. 4, October-December 1980, pp. 200-204.

158. GRIFFITHS, M. A rapid assessment tool for dietary adequacy: Its development and use in Indonesia. In: Israel, R.C., ed., Using Communications to Solve Nutrition Problems. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, in press.

This paper presents the development and use of a dietary recall form designed especially for a nutrition survey carried out as part of the Indonesian Nutrition Communication and Behavior Change Component of the national nutrition program. Since a preliminary survey of status had already identified deficiencies of protein, calories, and vitamin A as the principal problems that could be addressed through education, the form was designed to accommodate food categories based on their calorie, protein, or vitamin A content. Amounts were recorded on a scale readily understood by field workers with limited literacy and work experience. Field testing led to some adaptations, resulting in a reliable survey instrument. The paper presents the development activities in detail and includes a sample of the final form.

159. GRIFFITHS, M. Growth Monitoring. Primary Health Care Issues, Series I, Number 3. Washington, D.C., American Public Health Association, 1981. 70p.

Growth monitoring is a useful educational tool, for it can actively involve a mother in her child's health care, and weighing programs can promote nutrition awareness on a community level. This comprehensive work presents the technical basis and techniques of growth monitoring, including descriptions of various charts and scales. Guidelines are presented for program organization at the central, community, and family levels. Additional chapters discuss using monitoring results for family education, the training of primary health care workers, problem identification, and program evaluation. An appendix provides a step-by-step protocol for weighing and measuring.

160. GRIFFITHS, M. *Mothers Speak and Nutrition Educators Listen: Formative Evaluation for a Nutrition Communications Project in Special Territory of Yogyakarta, Central Java, South Sumatra*. New York, Manoff International Inc., 1980. Vol. 1, 287p.

This volume, one of the five cited in the Case Studies section (Manoff International, 1983), describes in detail the household interviews and field trials conducted in the developmental phase of the project. The open-ended, participant-observer interviews with 328 households served as the basis of trials of new weaning foods. The results of the trials are discussed in detail, providing an example of the exhaustive formative research which was one reason for the program's success. The mass of information about the women's knowledge, attitudes, and practices includes data contrary to that which would have been assumed without such advance research.

161. GUPTA, R.; SHARMA, I. An overview of the dietary consumption pattern of pregnant and lactating mothers of Haryana region, Hissar. *The Indian Journal of Nutrition and Dietetics*, vol. 17, 1980, p. 13-9.

A study of the diets of breast feeding mothers found that most were inadequate, but that mothers were lactating successfully and did not show overt signs of malnutrition. One possible reason is that diets are most restricted during lactation, principally because of food-related beliefs, such as the belief that specific foods (fruit, tea, lentils) would be harmful to the mother's or child's health. Some beliefs were constructive, promoting the use of milk and nuts to increase the mother's milk supply. The author concludes that because these food restrictions are voluntary and due to beliefs rather than lack of access to foods, there is a need to "rectify the knowledge gap" through a nutrition program that should be incorporated into the state-level nutrition policy.

162. HERTZLER, A.A.; VAUGHAN, C.E. The relationship of family structure and interaction to nutrition. *Journal of the American Dietetic Association*, vol. 74, no. 1, 1974, pp. 23-27.

Some nutrition education programs fail because nutrition educators do not examine the context of the individual's diet, therefore missing constraints and influences that can enhance or impede implementation of new food behavior. This article reviews a large number of articles dealing with variables within the household, including socieconomic factors (family size and composition, race, ethnicity, education, employment, income, sex of family head) and personal interaction variables (parent-child interaction, parental interaction, satisfaction with marriage, and conjugal decision-making). The authors recommend that further research be conducted into the impact of these variables.

163. HOPKINS, S.; et al. Nutrition information sources among Australians and Italians in Perth. Community Health Studies, vol. 4, no. 3, 1980, pp. 215-219.

A random sample of Italian-born and native Australians was surveyed. Open-ended questionnaires regarding sources of nutrition information were supplemented with data on subjects' heights and weights. Responses were categorized as "inside" (family or personal experience) or "outside" (media, schools, health professionals); 71% of the Italians and 44% of the Australians relied more heavily on "inside" sources. Obesity was much more common among Italians. Obese individuals of both groups tended to have fewer "outside" sources of information. The results, which must be interpreted cautiously because of the small number of variables studied, point to correlations between obesity and language problems, traditional values in food consumption and personal appearance, and social class. Nutrition educators must examine underlying causes of problems such as obesity, for simple dissemination of information, particularly through the mass media, may not reach or motivate the audience that needs it most.

164. ISRAEL, R.; TIGHE, J., eds. Maternal and Infant Nutrition Reviews. Newton, Massachusetts, International Nutrition Communication Service Publications, Education Development Center, 1982-83. bibl.

The INCS has produced 34 country-specific monographs summarizing published and unpublished reports on nutrition status, beliefs, practices, programs, and correlations. Sources include government plans, reports from private agencies, and informal field reports; an annotated bibliography supplements the body of the work, which presents the information by topic. The series was contracted by U.S.A.I.D. to be used as briefing documents for overseas nutrition education consultants and has also been used by professionals and field workers in the countries surveyed. The series includes separate reports on Bangladesh, Bolivia, Burma, Cameroon, Costa Rica, Dominican Republic, Ecuador, Egypt, Ghana, Guatemala, Kenya, Haiti, Honduras, India, Indonesia, Jamaica, Jordan, Lesotho, Liberia, Mali, Morocco (available in English and French), Nepal, Pakistan, Panama, Peru, Philippines, Senegal and Gambia (in one volume), Sri Lanka, Sudan, Tanzania, Thailand, Yemen, Zaire, and eight nations of the South Pacific region.

165. JOHNSON, A.; BEHRENS, C.A. Nutritional criteria in Machiguenga food production decisions: A linear-programming analysis. Human Ecology, vol. 10, no. 2, 1982, pp. 167-89.

A mathematical model was developed to analyze the factors considered by this Amazonian tribe in making food production decisions. Inputs included foods used, with their associated labor costs; nutritional constraints affecting production decisions; the estimated nutritional value of each type of food; and the estimated nutritional requirements of the population. Output data were obtained by observing hunting, gathering, and fishing activities; measuring gardens; and randomly sampling crop densities and harvest yields. Assumptions are stated. Linear programming yielded several optimal solutions that would permit the satisfaction of nutritional requirments; none resembled the group's actual allocation of effort. Nevertheless, their food production is adequate and signs of nutritional deficiencies are rare. The reasons for the discrepancies were apparently nonquantifiable factors such as security, drudgery, diversity, and taste. The authors conclude that the pattern of food production is not determined simply by cost-efficiency, and that the Machiguenga are willing and able to expend extra labor to meet needs and wants beyond those of nutritional requirements.

166. JOHNSTON, E.M.; SCHWARTZ, N.E. Physicians' opinions and counseling practices in maternal and infant nutrition. Journal of The American Dietetic Association, vol. 73, September 1978, p. 246-51.

A self-administered questionnaire was mailed to physicians in British Columbia, Canada, to determine how well pediatricians, obstetricians, and general practitioners included nutrition education in their counseling of patients. Opinions and practices were elicited. The article presents tables showing the questions asked and the scores of the three groups; the discussion relates opinions and practice scores to correlations with length of time practicing, use of professional nutritionists, attendance at nutrition workshops and courses, and sex, but none of the variables studied indicated a consistent, significant effect on both opinion and practice scores.

167. KRANTZLER, N.J.; MULLEN, B.J.; COMSTOCK, E.M.; HOLDEN, C.A.; SCHUTZ, H.G.; GRIVETTI, L.E.; MEISELMAN, H.L. Methods of food intake assessment--An annotated bibliography. Journal of Nutrition Education, vol. 14, no. 3, 1982, pp. 108-119.

Studies of methods of assessing food intake are scattered throughout the literature of the many relevant disciplinary fields. This generously annotated bibliography collects 87 items of research literature on methodology of intake assessment, mostly from five U.S. nutrition journals, although foreign journals are also represented. Tables summarize the studies' demographics, dates, sampling protocols, and study design features.

168. MANCEBO, J.F.; ONATE, L.U. The nutritional behavior of some mothers of different income levels and the nutritional status of their pre-school children. Philippine Journal of Nutrition, April-June 1979, pp. 80-6.

Nutrition education projects need to know the relationships between income, nutritional behavior, and nutritional status. This study examined how income and nutritional behavior of rural mothers interacted with the nutritional status of preschool children. The health and nutrition status of 99 children was measured, and their 59 mothers were interviewed to determine their nutrition knowledge, attitudes, and practices. Mothers in all income categories scored better in knowledge than in practices, but the description of the instrument design does not permit conclusions about the relationship of these scores. Mothers in the middle-income group had more positive behavior than low-income mothers, but there was no significant difference in the numbers of malnourished children at different income levels. There was a correlation between positive nutritional behavior and child's nutritional status. Thus, mothers' nutrition knowledge, attitudes, and practices are important in determining nutrition status, independent of income, and nutrition education is the intervention of choice to improve this situation.

169. MARTORELL, R. Nutrition and Health Status Indicators: Suggestions for Surveys of the Standard of Living in Developing Countries. Washington, D.C., Development Research Center, The World Bank, February 1982. 97p. bibl. (Living Standards Measurement Study Working Paper No. 13)

This report examines nutrition and health indicators appropriate for cross-sectional surveys of households in developing countries, to help planners design appropriate surveys. Parameters are examined in seven areas: anthropometry, birth weight, clinical examination, biochemistry, food and nutrient intake, breast feeding, and illness. Specific standards such as the Waterlow and Gomez growth categories are discussed. The relative usefulness and interrelationships of various indices are reviewed.

170. MITTAL, M.; CHARI, P.S.; RANA, A. Educational needs of rural mothers of Gagret village in Himachal Pradesh for forming desirable food habits in children of 4-6 years of age. The Indian Journal of Nutrition and Dietetics, vol. 19, 1982, p. 14-19.

A questionnaire was developed using expert opinion on advisable nutrition knowledge, attitudes, and practices, and was administered to illiterate mothers of young children. Categories included the establishment of desirable eating habits, appropriate diet for the child, developing favorable attitudes towards food, and serving of food. Mothers also were asked their major source of nutrition information. The results are presented in this article and used as the basis for recommendations for health and nutrition workers in the community to help mothers make better use of available resources.

171. MORRIS, S.S.; FARRIER, S.C.; ROGERS, C.S. et al. Feeding behaviors, food attitudes, and body fatness in infants. Journal of the American Dietetic Association, vol. 80, no. 2, April 1982, p. 330-334, bibl.

172. MORSE, W.; SIMS, L.S.; GUTHRIE, H.A. Mothers' compliance with physicians' recommendations on infant feeding. Journal of The American Dietetic Association, vol. 75, August 1979, p. 140-48

Mothers identified by their physicians as having one child under 15 months old completed a mailed questionnaire on current feeding practices of their infants, their nutrition knowledge, health-related attitudes and beliefs, and demographic data. The article presents a detailed description of the findings, including a copy of the questionnaire and the sum of responses. Compliance items included instructions on introduction of solid foods and the use of vitamin supplements, iron-fortified infant formula, and cow's milk. Most physicians themselves did not comply with one or more of the recommendations of the American Academy of Pediatrics Committee on Nutrition, notably in recommending vitamin supplements for infants fed commercial vitamin-fortified formula, and early introduction of solid foods and whole and skimmed cow's milk. Mothers' nutrition knowledge scores correlated negatively with compliance scores and positively with most attitude items. Mothers with more nutrition knowledge were more likely to breast feed their infants, wait longer before giving whole milk, and delay the introduction of solids. Compliance was negatively correlated with the length of time a mother had gone to a particular physician. The discussion of the results focuses on the phenomenon of compliance, ignoring the fact that the areas in which the mothers did not comply were the ones in which their physicians were wrong, and does not probe their other sources of information.

173. MOUTEL, M. Alimentation et Sevrage. Aspects Rencontres au Sein du Service de Pediatrie et de la PMI de l'Hopital Departemental de Mokilo (Cameroun). Université d'Aix-Marseille-memoire Médecine Tropicale, 1981-82. 43p.

174. NATIONAL ACADEMY OF SCIENCES. Recommended Dietary Allowances. 9th edition. Washington, D.C., National Academy of Sciences, 1980. 185p.

This book presents the ninth edition of Recommended Dietary Allowances updated to present standards based on the best scientific knowledge available. The allowances are designed to serve as guidelines for interpreting food consumption records of groups and evaluating the adequacy of food supplies in meeting nutritional needs, planning and procuring food supplies for groups and establishing guides for public food assistance programs, development of new food products by industry, establishing guidelines for nutritional labeling of foods, and developing nutrition education programs. "As the applications of RDA continue to expand, it is increasingly important that their significance and limitations be clearly understood" (p. v).

175. OACE, S.M., ed. Perspectives on nutrition education instrumentation. Journal of Nutrition Education, vol. 13, no. 3, Septemebr 1981, pp. 83-114.

176. OJOFEITIMI, E.O. Causes of protein energy malnutrition as viewed by the client's mother. Journal of Tropical Pediatrics, vol. 28, no. 3, June 1982, pp. 147-48. [Also published in French]

A survey of 28 Nigerian mothers of malnourished children found that none attributed the condition to inappropriate diet, but most blamed supernatural powers. Familiarity with prevailing beliefs and customs is vital to effective nutrition education.

177. OLSON, J.C.; SIMS, L.S. Assessing nutrition knowledge from an information processing perspective. Journal of Nutrition Education, vol. 12, no. 3, July-September 1980, pp. 157-161.

178. ONUOHA, G.B.I. The changing scene of food habits and beliefs among the Mbaise people of Nigeria. Ecology of Food and Nutrition, vol. 11, 1982, pp. 245-250.

A survey of 1,506 individuals found that food prohibitions are not as influential as they once were. Younger respondents were more likely to ignore prohibitions. The authors conclude that trends in food habits and beliefs could be sustained in a positive way by nutrition education to reduce the negative impacts of old food taboos.

179. PELTO, G.H. Anthropological contributions to nutrition education research. Journal of Nutrition Education, vol. 13, supplement 1, 1981, pp. S2-S8.

Anthropological approaches to nutrition education research include the following components of research strategy: participant observation of population characteristics; collection of qualitative and quantitative data; development of a broad data base; use of observational and unobtrusive measures; development of new data collection tools for measuring intake, beliefs, values, and attitudes; approaches to community participation; research designs that operate on several levels, ranging from the individual to the broader society; statistical methods that avoid assumptions of homogeneity inherent in the use of averages; and the use of multivariate statistical techniques to elucidate the interactions among factors that affect people's dietary behavior.

180. PELTO, G.H. Consultant Report for Cameroon (March 9-23; August 12-25, 1983): The Effect of Food Availability and Infant Feeding Practices on the Nutritional Status of Children 0-23 Months: A Progress Report. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1983. 47p.

This report presents an anthropological approach to a baseline study of the nutritional needs, beliefs, and practices of a nutritionally vulnerable group. The study, over two years, will enlist anthropologists, public health specialists, and nutritionists to document and assess these features. Variables to be studied include infant feeding practices, the community's perception of the developmental stages of early childhood, family food availability, and food utilization, aspects of the prevailing food belief system, and social relationships. Preliminary findings show that many babies are given water or millet water at an early age and a widespread belief in the concept of "bad milk."

181. PLAT, P. Habitudes alimentaires et éducation nutritionnelle. La Vie Médicale au Canada Français, vol. 10, March 1981, p. 233-42.

This article discusses the natural wiseness of young infants about their nutrition needs; parents should simply provide food of sufficient quality. But as children reach school age, they come under many influences on their natural instincts and need to be prepared to make conscious decisions about what to eat. Thus, the need for nutrition education at the elementary level. Specific nutrition education projects for children in France are presented.

182. POLLITT, E.; LEWIS, N. Nutrition and Educational Achievement. United Nations Administrative Committee on Coordination, Subcommittee on Nutrition, Sixth Session, Paris, 25 February-1 March 1980. 29p. bibl.

This paper presents an extensive review on the literature about the role of malnutrition as a determinant of student achievement within the formal educational process, including the role of nutrition in shaping the aptitudes and abilities of the preschool child. Even in populations where malnutrition has not been considered a major public health problem, there may be functional consequences secondary to normal nutritional variability.

183. RAO, K.S.J. Attitudes to women and nutrition programmes in India. The Lancet, vol. 22, no. 29, December 1979, p. 1357-58.

Indian attitudes towards girls and women are responsible for the higher death rates of females of all ages, not just women of child-bearing age. Development programs have favored men, as shown by their greater relative gain in life expectancy, while programs aimed at women, such as feeding programs, have not succeeded. "The wisdom of a nationwide network of supplementary nutrition programmes for pregnant and lactating mothers, wherein the woman is seen only in the role of a mother, needs to be reviewed."

184. SADSAD, G.T. Mass media habits of rural people in a Philippine Municipality. Annals of Tropical Research, vol. 1, no. 2, October-December 1979, pp. 104-111.

This paper presents the results of a study of mass media practices conducted in a town in the Philippines as a baseline study for a nutrition education project. The investigators found that radio was the most prevalent form of mass media, both for entertainment and for information. Income, education, occupation, and place of residence were all significant variables in determining listening patterns. Investigation of their preferences in programming served as the basis for developing a campaign that would reach the intended audience with messages that they would be interested in listening to.

185. SCHWERIN, H.S.; STATNTON, J.L.; RILEY, A.M.; et al. Food eating patterns and health: a reexamination of the Ten-State and Hanes I surveys. American Journal of Clinical Nutrition, vol. 34, no. 4, April 1981, pp. 568-80.

186. SHANNON, B.; MARBACH, E.S.; GRAVES, K.; SIMS, L.S. Nutrition knowledge, attitudes, and teaching effectiveness of K-6 teachers. Journal of Nutrition Education, vol. 13, no. 4, December 1981, pp. 145-49.

187. VALDECANAS, O.C.; QUIMPO, C.F.; BALOLOY, S.B. Operation Nutribooth: a feasibility study. Philippine Journal of Nutrition, vol. 33, no. 1, January-March 1980, pp. 48-56.

Nutrition information centers were staffed by nutrition students to increase nutrition knowledge among homemakers and to provide local groups with an innovative model for nutrition education. Surveys of populations in the vicinity of the booths found that users were low income middle-aged women with four or more children. Information gained was used for meal planning, food budgeting, and preparation of new recipes. Nutribooth was deemed a success in reaching its intended audience, which perceived it as credible. The combination of personal contact and handout materials was especially effective.

188. VAN ESTERIK, P. Integrating Ethnographic and Survey Research: A Review of the Ethnographic Component of a Study of Infant Feeding Practices in Developing Countries. New York, The Population Council, January 1983. 42p. (International Programs Working Paper No. 17).

This paper describes the methodology for incorporating ethnographic principles into a study of factors related to infant feeding practices in four countries (Kenya, Indonesia, Thailand, and Colombia). The purpose of this paper is not to describe the study but to explain the assumptions underlying the ethnographic component, to show how it was used in the study, to outline the steps followed in implementing the field work, and to show how anthropological concepts can be adapted and used in interdisciplinary research.

189. VEMURY, M. Beliefs and Practices Affecting Food Habits in Rural Colombia. New York, CARE, 1980. 132p.

The purpose of this phase of the national food habits survey was to gain an understanding of the social and cultural factors that affect food behavior and food consumption patterns in the rural areas, particularly women and children. The results of the survey are presented in detail, including status and belief findings, socioeconomic characteristics, and food production, purchasing, cooking, and consumption patterns.

190. VEMURY, M. Environmental and Social Influences on Food Consumption Patterns in Six Developing Countries. New York, CARE, 1980.

This survey interviewed mothers about their food-related beliefs, practices, and socioeconomic status. Results are presented in tabular form for Peru, Colombia, Guatemala, Tunisia, Jordan, and Bangladesh.

191. VERMEERSCH, J.A.; SWENERTON, H. Interpretations of nutrition claims in food advertisements by low-income consumers. Journal of Nutrition Education, vol. 12, no. 1, January-March 1980, pp. 19-24.

192. VERMILLION, J. Consultant Report for Tunisia (July 11-22, 1982): Recommendations for a KAP Survey Instrument and Data Analysis System. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1982.

This report presents recommendations for a survey of knowledge, attitudes, and practices as the basis of a national nutrition project. The sampling methodology and rationale for selection of data processing equipment are also presented; the questionnaire to be used is included as an appendix.

193. WALIA, B.N.S.; GAMBHIR, S.K. The relationship between childhood malnutrition and maternal knowledge and beliefs regarding nutrition. Indian Pediatrics, vol. 12, no. 7, 1975, pp. 563-568.

A comparison of the diets of well-nourished and malnourished children of similar socioeconomic status found that the former group had significantly higher caloric intakes, attributed to the earlier introduction of semi-solid foods to their diets. Mothers of well-nourished children did not score better than mothers of malnourished children on an informal knowledge and belief test. The differences in nutrition status therefore were due to traditional habits, not to superior knowledge.

194. WHO. Contemporary Patterns of Breast-feeding: Report on the WHO Collaborative Study on Breast-feeding. Geneva, Switzerland, World Health Organization, 1981. 220p.

To assess the status of breast feeding throughout the world, WHO selected nine representative countries to study in detail. This report presents the rationale, methodology, and findings of the study of the prevalence and duration of breast feeding, breast feeding and reproduction, family characteristics, birth weights, supplementary foods, health services, and the marketing and distribution of breast milk substitutes. Appendices present the findings in tabular form and the questionnaires and data collection guides used in the surveys. The countries studied (Ethiopia, Nigeria, Zaire, Chile, Guatemala, India, Philippines, Hungary, and Sweden) were selected to represent a range of socioeconomic profiles and to include countries known to have high or low, increasing or decreasing rates of breast feeding. The survey has been used as the basis of programs and further research.

195. WOOLCOTT, D.M.; KAWASH, G.F.; SABRY, J.H. Correlates of nutrition knowledge in Canadian Businessmen. Journal of Nutrition Education, vol. 13, no. 4, December 1981, pp. 153-56.

IV: Case Studies

GENERAL

196. AUSTIN, J.E.; ZEITLIN, M.F. Nutrition Intervention in Developing Countries: An Overview. Cambridge, Massachusetts, Oelgeschlager, Gunn & Hain, 1981. 227p.

197. FIELDHOUSE, P. Nutrition and education of the schoolchild. World Review of Nutrition and Dietetics, vol. 40, 1982, pp. 83-112.

198. GRIFFITHS, M.; COOKE, T.; MANOFF, R.K.; ZEITLIN, M.F. A Case for an Anthropological Perspective in Nutrition Education Materials Design. Paper presented at International Congress of Nutrition, San Diego, California, 1981. Washington, D.C., Manoff International, Inc., 1981. 6p.

199. MORLEY, D.; CHANG, C.Y. Inappropriate nutrition education in the villages. Lancet, vol. 1, no. 8213, January 24, 1981, p. 209.

This letter to the editor presents the results of a survey of 155 articles published between 1975 and 1980 in 6 journals, emphasizing the 25 articles on protein-calorie malnutrition. Most of the articles discuss protein requirements but do not mention the calorie needs of young children. Only one article dealt with the addition of fats and oils to increase the calorie content of weaning foods. Because most professionals, including social workers, derive their information from such articles, it is misleading to place such an emphasis on protein.

200. SCHURCH, B; WILQUIN, L. Nutrition Education in Communities of the Third World. Lausanne, Switzerland, Nestle Foundation, 1982. 208p.

This annotated bibliography presents summaries of over 150 articles on nutrition education, published between 1965 and 1981. In addition to full bibliographic references and abstracts (in English and French), charts are provided to identify each item's major topics and the countries studied.

201. UNESCO. Nutrition Education: Case Study Experiences in Schools. Paris, Unesco, 1983. 95p. (Division of Science, Technical and Vocational Education, Nutrition Education Series, 1)

These ten articles present recent developments in formal nutrition education at the primary level in India, Sierra Leone, Oman, and Ghana; at the secondary level in the United States, the Dominican Republic, and Scotland; and at the tertiary level in the Sudan, Nigeria, and the United States. The introduction stresses that nutrition education provided by knowledgeable professionals is vital to the health of all in the face of changing food resources and the prevalence of opportunists who will take advantage of the public's interest in nutrition if responsible and competent individuals do not meet this demand.

202. UNESCO. Nutrition Education: Curriculum Planning and Selected Case Studies. Paris, Unesco, 1982. 144p. (Science and Technology Education Document Series No. 3; and Division of Science, Technical and Vocational Education, Nutrition Education Series, 4.)

This document is designed to help primary school teachers integrate nutrition education into their existing curricula. It can be used as pre-service or inservice guidance, to promote the exchange of information and ideas about nutrition education at the primary level. Part I presents basic nutrition facts and concepts for the teacher not trained in nutrition. Part II presents practical examples of case studies and guidelines developed in several countries, including the United States, Cyprus, Jamaica, Mauritania, Sierra Leone, and Great Britain. In Cyprus, nutrition was integrated into lessons on home economics, hygiene, science, and school gardening. In Jamaica, an outline presents nutrition as a unifying theme in courses in mathematics, social studies, and science. The document is illustrated with drawings, figures, and tables.

203. UNESCO. Nutrition Education: Role of Colleges in Education. Paris, Unesco, 1983. 84p. (Division of Science, Technical and Vocational Education, Nutrition Education Series, 2)

Colleges of education play a unique role in formal nutrition education, because they are the trainers of trainers. Those whom they train and motivate should be able to pass on their knowledge, and their commitment, to their students. This volume presents four papers: a survey of nutrition education training by continent and nation; a description of innovative projects for training Israeli school teachers in teaching nutrition; description of a Philippine experience in the introduction of nutrition education components in health education; and a description of the role of colleges of education in nutrition education in the United States.

204. UNICEF. The State of the World's Children, 1984. New York, UNICEF, and Oxford, Oxford University Press, 1984. 126p.

Recent advances in biological science and social organization are making possible a Child Survival Revolution, which will be able to save millions of lives annually through interventions that can make a difference with a minimum of resource investment: growth monitoring, oral rehydration therapy, breast feeding promotion, and immunization. This report describes the UNICEF campaign, including case studies of projects in which nutrition education played a role.

205. WHO. An action-oriented research, development and training programme in nutrition. WHO Chronicle, vol. 33, no. 6, June 1979, pp. 225-27.

AFRICA

206. BARAKAT, M.R. Report to the Government of the Sudan on establishment and strengthening of provincial nutrition education centres in Sudan. Review of the programme activities during the period May 1978 - February 1980. Rome, FAO, 1980. 52p.

207. BARAKAT, M.R. Report to the Government of the Sudan on establishment and strengthening of provincial nutrition education centres in the Sudan, phase 2, March 24-June 23, 1981. Rome, FAO, 1981. 88p.

These reports present the consultant's observations and recommendations regarding assessment and expansions of nutrition education and training in an area including Kordofan, Gezira, and the provinces of Khartoum and Blue Nile. Programs included supplementary feeding for pregnant and nursing mothers and children and the establishment and strengthening of provincial training centers for nutrition education.

208. CAVUSGIL, S. T.; AMINE, L. S.; VITALE, E. Marketing supplementary food products in LDCs: A case study in Morocco. Food Policy, May 1983, pp. 111-120.

Marketing procedures to introduce weaning foods are examined in the context of a recent effort to develop and market a new infant cereal in Morocco. Assistance from UNICEF and a local manufacturer of table oils led to production of a new product, but the project failed. The market price of the product was lower than the price of competing brand-name cereals, such as Nestlé, but the difference was not sufficient to promote adequate sales, and the manufacturer was forced to sell out to the government. Free supplies provided by health centers contained the same product, but lower grade packaging led to popular perceptions of an inferior product. No point-cf-puchase promotion was attempted. The mass media promotion campaign showed the new food balanced on a scale with several foods, including fish, which is perceived as an inferior food not appropriate to feed to young children. Adoption of modern promotional techniques should be applied: "identify needs; establish product acceptance; properly motivate consumers; ensure efficient distribution; support the basic product; and achieve effective pricing levels."

209. CHALE, F.; KAUNDA, J.; DIRORIMWE, C.; MUNTEMBA, D. Namibia - Training for Food Distribution. Report. Rome, FAO, 1981. 45p.

210. COMITE ANTI-BWAKI. 9ème Rapport Annuel 1980-1981. Bukavu/Kivu, Republique du Zaire, 1982. 87p.

This report reviews the budget and activities of the Comité pour la Lutte contre le Kwashiorkor et la Protection de l'Enfance au Kivu (abbreviated Comité Anti-Bwaki) during 1980 and 1981. Reports are presented from health and nutrition centers financially supported by the Comité Anti-Bwaki. Health care, food distribution, and nutrition education are the principal activities. Topics in nutrition education are listed for some centers, and evaluation of the nutrition education methodology is included. Home visits had proved to be the most effective way to communicate nutrition information in the village setting.

211. FRANKISH, J.G. Nutrition rehabilitation in Transkei, an evaluation. South African Medical Journal, vol. 53, 1978, pp. 507-511.

This report presents findings on the effectiveness of nutrition rehabilitation units in improving long-range nutrition status relative to treatment in the usual hospital setting. Rehabilitation units at two hospitals treated 78 children for malnutrition, providing nutrition education in addition to hospital care. At 6- and 14-month followups, the children were no better off than 14 control children, although the education did seem to have had some effects, such as increased home gardening by parents. The small gains achieved through education seemed to have been overwhelmed by the overriding problems of economic, social, agricultural, and other needs.

212. GILMORE, J.W.; ADELMAN, C.C.; MEYER, A.J.; THORNE, M.C. Morocco: Food Aid and Nutrition Education. A.I.D. Washington, D.C., U.S. Agency for International Development, 1980. 62p. (Project Impact Evaluation Report No. 8)

This project successfully integrated nutrition education into a supplementary feeding program administered by Catholic Relief Services. Educators were trained through a hierarchy of nutrition professionals, supervisors, and local-level teachers. After initial support from USAID, the project was administered by the Ministry of Social Affairs through a well-organized system of 300 centers. The local costs of the centers and the teachers' wages were financed by the participating mothers. Evaluation 14 months after expiration of the initial USAID grant showed that the social education centers had positively influenced the nutritional levels of the children. According to one analysis, the program resulted in a 69% reduction in the incidence of moderate and severe malnutrition, apparently through increases in mothers' knowledge and resulting changes in their food-related practices. Another contributing factor was the relatively large size of the ration--45 kilos per recipient per year and three rations per family, which probably helped reduce the effects of sharing within the family and served as a major income subsidy. Lessons learned through this project include the need for a unified and centralized record-keeping system to document program activities and progress, and the recommendation that dependency on imported foods be minimized.

213. GITHAGUI, N. Butula Family Life Training Centre (Busia District). Nairobi, Kenya, African Medical and Research Foundation, 1980. 22p.

The Butula Family Life Training Center is one of several centers throughout Kenya that offer nutrition rehabilitation and instruction for mothers of the malnourished children. Three-week courses include health education, agriculture, nutrition, and family planning. This study included home interviews with 53 mothers and found that poor feeding practices, such as skipping breakfast, and poverty were the major contributing factors to childhood malnutrition. Malnutrition was often attributed to non-nutritional causes such as evil spirits, and treatment by traditional healers often delayed or precluded nutritional intervention. Effects of the education program were mixed: there was some increase in knowledge, but little change in behavior, partly because of crucial missing knowledge. For example, mothers could name the three food groups but could not give examples of the foods and did not base meals on them. Recommendations include better staff training, increased community demonstrations (such as gardening), and encouragement of successful participants to become role models in the community, explaining lessons (such as causes of malnutrition) to other mothers. Followup and recruitment programs could improve the effectiveness of extension workers.

214. HOORWEG, J.C.; NIEMEIJER, R. The Impact of Nutrition Education at Three Health Centers in Central Province, Kenya. Leiden, The Netherlands, African Studies Centre, 1980. 65p. (Research reports No. 10)

Nutrition instruction provided at maternal and child health centers by trained nurses was evaluated by interviewing Kikuyu mothers of children 6 months to 5 years old. Data were collected on maternal nutrition knowledge, child food consumption, and anthropometric measures. Impact of the program was evaluated by comparing a group who attended frequently with a group of mothers who were infrequent visitors to the health centers. There were few differences between the groups' food preferences, infant feeding practices, and children's nutritional status, but the frequent visitors were more likely to introduce weaning foods at an early, appropriate age. Frequency of visitation was a significant factor only in the relative nutrition knowledge of the mothers. Therefore, although nutrition education did succeed in increasing knowledge, there was no significant effect on behavior or nutrition status. Since the malnutrition rate in the area was high (30% of the children were underweight for their heights), the authors conclude that more effective interventions should be sought. Greater supervision and organizational support for nutrition workers are recommended, as well as the introduction of growth charts.

215. HOORWEG, J.C.; NIEMEIJER, R. The Nutritional Impact of the Pre-School Health Programmes at Three Clinics in Central Province, Kenya. Leiden, The Netherlands, African Studies Centre, 1980. 69p. (Research reports No. 11)

The program presented in this paper offered both nutrition education and supplemental food to mothers and children 6 months to 5 years old. Interviews with long-term participants and newcomers to the program showed that attendance did improve mothers' nutrition knowledge and food preferences, but that their children were continuing to grow at the same rate as before entering the program, and education did not influence children's diets. Therefore, the strength of the program appeared to be supplementation rather than education.

216. KOECHE, M.K. The Impact of Improved Nutrition on the Health of Rural Kenyans: The Use of Nonformal Educational Technology. Edwards, A.L. et al., eds. New Dimensions of Appropriate Technology. Ann Arbor, Michigan, University of Michigan, 1980, pp. 159-173.

217. MINETT, N. A Successful Health Education Program in West Africa. Freetown, Sierra Leone, CARE/Sierra Leone, 1980. 28p.

The objective of this project was to develop educational materials for use in rural villages and measure their ability to produce behavioral changes in lactating women. Pregnant mothers were interviewed about their demographic and household characteristics, health and nutrition practices, and dietary intakes. Survey findings were used to develop ten group discussion sessions about health and nutrition. A flip chart presented photographs illustrating the lessons, and health education teams were trained in communications and evaluation. The lessons were adapted according to findings of cultural acceptability, ease of translation into local languages, and semantic clarity. Followup interviews with women fitting the same socioeconomic backgrounds as the original groups found that those receiving education through this program had made several changes, notably more mothers boiled drinking water, and both mothers and their infants ate more fruits, vegetables, and protein foods. Changes were small, and a longer test interval is needed to determine whether more significant behavior changes can be obtained.

218. MUNGER, S.J. Mass Media and Nonformal Nutrition Education: Final Study Report. Allison Park, Pennsylvania, Synectics Corporation, for AID Development Support Bureau, 1978. 133p.

This study was conducted in order to develop a demonstration of a communication model to guide the design of education programs for improvement of nutritional behavior, particularly ways to combine mass media and nonformal education to achieve greater impact than either alone. A model was developed based on addressing four domains of concern: education, communication, behavior, and evaluation. Application of the model to a trial in Tunisia included use of short radio messages and existing nonformal nutrition education activity in the health centers. Interest in the mass media component became a national concern of great popularity, and the doctor character who delivered the messages became a folk hero. Interviews with mothers attending health centers yielded no conclusive evidence of behavior changes, but the test period was short. There were some knowledge and attitude changes. The model was judged to be a useful general framework within which conceptual and methodological improvements might be carried out. The study did indicate that a comprehensive communication model can lead to more rigorous development of media campaigns than might otherwise be achieved.

219. PIELEMEIER, N.R.; JONES, E.M.; MUNGER, S.J. Use of the Child's Growth Chart as an Educational Tool. Allison Park, Pennsylvania, Synetics Corporation for AID Office of Nutrition Development Support Bureau, 1978. 121p. bibl.

In Ghana and Lesotho, mothers are learning to interpret their children's growth charts and are learning through them the principles of child nutritional needs. This report presents the results of a year-long study of growth chart use in health centers. Controlled experimentation is needed, however, to determine the extent of effects on mothers' knowledge, attitudes, and practices, and on their children's health status. Such investigations could then be used as the basis of training of health workers who use the charts and make them more effective nutrition education tools.

220. SAINT-M'LEUX, M. Santé Rurale en Afrique Noire: Une Experience dans un Centre Médical au Gabon. Thèse pour le doctorat en Médecine. Paris, Faculté de Médicine St. Antoine, 1982. 101p. bibl.

This thesis outlines the medical situation in Gabon; one chapter concerns the incidence of malnutrition in children and the importance of nutrition education. In the majority of malnutrition cases, the cause is lack of knowledge and poor utilization of local resources. The most effective preventive measure against malnutrition would be to develop effective nutrition education programs for the Maternal and Child Health Care Centers, but this would require government support.

221. SMITH, I.F. Rehabilitation of protein-energy metabolism and hormonal status in Nigerian children. Nutrition Reports International, vol. 24, no. 3, September 1981, pp. 602-13. bibl. [Also published in French]

This study showed that two weeks of hospitalization were not sufficient for the nutritional and hormonal rehabilitation of infants suffering from protein-energy malnutrition. In addition, the treatment of these children in smaller rehabilitation centers scattered throughout the country would be more effective, making it possible to provide some nutrition education for their mothers, which was impossible in the hospital setting.

222. STEPHENS, A.J.H. The impact of health care and nutritional education in an urban community in Zambia through the under five clinics. Journal of Tropical Medicine and Hygiene, vol. 78, no. 5, 1975, pp. 97-105.

An assessment of the under-fives clinics compared information obtained from mothers of children with kwashiorkor and from a control group of mothers of healthy children with the same socioeconomic background. Factors examined included family status, socioeconomic factors (father's profession, wages, residence, length of stay in town), feeding habits, number of visits at the clinic, hospitalization of the child, and reasons for not attending the clinics. The clinics' impact on malnutrition was found to be inadequate, despite the large number of clinics available, and the author recommends that they be redirected and used as at risk clinics rather than being directed to all under-fives. The problem of preschool malnutrition should also be approached at the community level through its leaders to encourage the development of local food resources.

223. TANDBERG, A. Summer Project 1980: Final Report on the Participation in the Implementation of the Mass Media Nutrition Education Project in Kinshasa, Zaire. New Orleans, Nutrition Department, School of Public Health and Tropical Medicine, Tulane University, 1980. 126p. (NTR. 799 Special Studies: Field Research Study)

This consultant reports on one part of the development of the mass media campaign. Extensive baseline information was collected on food knowledge, attitudes, and practices, and on radio listenership. Radio and television materials were developed, based on objectives derived from this data. Pretesting of the English radio spots was apparently limited to 3 staff members; development was conducted almost exclusively within the central office, with little or no community investigation of the effectiveness of the spots. This lack of pretesting and the lack of evaluation of their impact before the consultant's departure results in a lack of definite conclusions about their effectiveness in achieving the goal of improving nutrition knowledge and thus affecting nutrition status. He suggests that, based on the initial survey findings, the problem is not lack of nutrition knowledge, but socioeconomic factors such as access to food and fuel, or time constraints.

224. TISA, B. Consultant Report for The People's Republic of the Congo (May 19 - June 15, 1982): Report on a Consultancy to Help Design Messages and Materials for the CARE/Congo Health and Nutrition Project. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1982. 37p.

This report by a media consultant presents a basic methodology for the design, pretesting, and evaluation of print and audiovisual nutrition education materials. Five Congo-based agencies participated in this project, which began with a survey of nutrition status and food habits. This report contains the educational objectives based on the findings of that survey, as well as step-by-step strategy for the program's development and design.

225. TISA, B. Consultant Report for The People's Republic of the Congo (November 5 - December 8, 1981): The Results of a Workshop to Develop Nutrition Education Materials. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1982. 87p.

This report presents a followup visit by a media consultant assisting in the development of a mass media nutrition education campaign by 5 Congo-based agencies. Earlier reports describe the survey design, data collection and evaluation, identification of priority problems, and a workshop to teach skills in message design and materials development. This report describes the materials developed for pretesting, the basic messages conveyed, the locations and results of the pretesting, and recommendations for revision and for new materials and new information needs uncovered in the development process. For example, more information was needed on radio availability and listening habits in order to refine the content and airing of radio messages.

226. WONE, I.; LAUTURE, H.DE; PERIER-SCHEER, M.; et al. Premiers resultats d'une enquète préalable à une action d'éducation nutritionnelle à Dakar [The first results of an investigation prior to a nutritional education campaign] *Dakar Societé Médicale d'Afrique Occidentale Française*, vol. 26, no. 3, 1981, pp. 338-346.

This report presents the results of a survey of nutrition practices and status designed to serve as a baseline for a nutrition education campaign in Dakar, Senegal. Interviews with 77 mothers or caretakers of 100 children under 3 years old revealed that economic conditions were relatively acceptable, and that the principal causes of inapproriate children's diets were essentially sociocultural, especially among children whose mothers had received little formal education.

227. WONE, I.; LAUTURE, H. DE; PENOT, C.; PERIER-SCHEER, M.; COHEN, M. Première évaluation d'une action d'éducation nutritionnelle dans la Medina de Dakar, Dakar Médical. *Dakar Societé Médicale d'Afrique Occidentale Française*, vol. 26, no. 4, 1981, pp. 420-26, bibl.

In March 1978, a nutrition clinic was begun in the Medina district of Dakar, Senegal. The clinic offered a nutrition education program to 77 mothers whose children were identified as suffering from first degree malnutrition. This report describes an initial survey taken of the participating mothers; the survey findings that indicated that malnutrition was related more to sociocultural reasons than socio-economic conditions; and the ensuing nutrition education program and its evaluation. The evaluation involved only requestioning the mothers on pre-nutrition education survey questions. Though the percent of correct answers increased after the nutrition education was completed, the authors suggest that an investigation into the behavior of the mothers should be done before an accurate evaluation can be made of the nutrition education program.

ASIA, NEAR EAST, PACIFIC

228. BUTT, H.W. *Towards self sustained and locally managed health education and nutrition programs for child welfare (The Chevalla Experiment).* Paper presented at the XII annual meeting of the Nutrition Society of India, Chandigarh, 3-4 March 1979. 27p.

This project used an integrated approach to health, education, and nutrition, emphasizing local initiative, local manpower, and local ingredients, focusing on improving the general quality of life. Costs and responsibilities were shared by participants, the community, and concerned government agencies. Operating in selected sections of the Chevalla block, near Hyderabad, the project emphasized health programs, provided day care for infants, primary schools for children, and nonformal education for those 12 to 16 years old. Income-generating projects were started wherever they seemed relevant to the concerns of the local women, and nutrition demonstration units were set up to promote use of new varieties of seeds.

229. CHADHA, R. The integrated child health scheme—an integration of a preschool nutrition programme with health and education services. Indian Journal of Nutrition and Dietetics, vol. 17, 1980, pp. 84-89.

The Integrated Child Health Scheme served 1000 low-income children in Calcutta as a pilot project to improve nutritional status. Services included nutrition supplements, vaccinations, and curative health services for children and nutrition and health education for their mothers. Services were provided through 10 centers which provided care for children under three years old in the mornings and those 3 to 5 years old in the afternoons. An evaluation conducted at the end of one year found attendance at 90%. Delivery rates of various services included: food supplements, 60% (impeded by food shortages and logistical problems); vitamin A supplements, 79%; deworming drugs, 89%; and iron and fold acid tablets for anemia, 50% (for at least 90 days). Nutritional status assessment of a random sample of 50% of participants found that most children had improved their weight for age and weight for height status, although there was no change in height for age, not surprising in this short time frame. There also were marked reductions in prevalence of nutritional deficiencies and infectious diseases.

230. CHAUDHURI, S.N. Nutrition education through under fives' clinics. Indian Pediatr., vol. 12, 1977, pp. 339-341.

Health clinics for children under 5 years old, located in rural and urban areas, provide nutrition education to mothers both in the clinics and in their homes, through trained child health workers. The author recommends that, to be more effective, these services should be integrated better with health care services, asserting that the cost/benefit ratio of the clinics is high because each provides care for 1000 children and nutrition education for about 450 mothers.

231. DEVADAS, R.P. Integrating nutrition education into the primary school curriculum in India. Journal of Nutrition Education, vol. 10, no. 3, 1978, pp. 113-115.

This pilot project was conducted in 666 primary schools in Tamil Nadu. An integrated syllabus was designed, and 3,600 teachers were trained in its use and in the recognition of signs of malnutrition. The baseline survey, objectives, program development, materials development, teacher training, and preliminary evaluation are described. Initial results showed improvements in nutrition knowledge and dietary practices, an increase in gardening, and reduced malnutrition.

232. DURONGDEJ, S.; ISRAEL, R.C. Consultant Report for Thailand (December 10-24, 1983): Description of a Forthcoming Bangkok Breastfeeding Promotion Project. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1984. 22p.

In response to studies showing that decreasing breast feeding rates were attributable in part to lack of medical support, a program has been designed to promote breast feeding in the 9 hospitals where 70% of all Bangkok births occur. Each hospital will establish goals for establishing rooming-in, for training staff in clinical techniques of breast feeding management, and for reducing hospital-based promotion of formula feeding. To help hospitals determine and reach these goals, the project will train hospital staff in lactation management and develop hospital-based nutrition education support materials for health professionals and mothers. The project will be conducted by the Faculty of Public Health and Mahidol University, with assistance from INCS (International Nutrition Communication Service) and from a private advertising firm in Bangkok. This paper presents in detail project goals, planned activities, schedules, and policy statements.

233. GHOSH, S.; MANMOHAN; YAYATHI, T. Domestic visualisation: An innovative approach to nutrition education. Journal of Tropical Pediatrics, vol. 23, 1977, pp. 282-285.

The pediatric outpatient department of a hospital in New Delhi, India, monitored children's growth and nutritional status, recording weights on the "Road to Health" chart. Each mother received counseling while waiting her turn to see the doctor. Counseling was provided by specially trained health auxiliaries using models and posters to explain the types and quantities of foods needed by young children. Followup of 913 children found that 77.4% improved their weight status.

234. GOPALDAS, T. Supplementary feeding program. Food Nutrition, vol. 4, no. 1/2, 1978, pp. 15-19.

This article draws on the lessons of Project Poshak, conducted in rural areas of Madhya Pradesh, India from 1971 to 1975, to present the reasons for including nutrition education campaigns in supplementary feeding programs. Take-home food supplements were distributed to children 6 to 36 months old and to pregnant and lactating women to supplement basic health services and nutrition education. Educational tools used included flip charts, growth charts, and demonstrations, as well as mass media. Results and lessons learned from the project are presented here in general terms.

235. GOPALDAS, T. Training Research in Nutrition-Health Education (NHE) for the Supervisors and Organizers of the Baroda Special Nutrition Programme (SNP). Baroda, Gujarat, India, Department of Foods and Nutrition, M.S. University of Baroda, n.d. 28p.

The SNP is the largest supplementary feeding program for children and pregnant and lactating women in tribal rural areas and urban slums in India and is administered through the central government. This training program was held in Baroda for part-time organizers in charge of feeding centers for 200 to 250 participants and for the full-time supervisors, each of whom oversees 20 to 25 organizers. About 80% of participating organizers attending the workshop reported never receiving any type of job training while employed in the SNP, while none of the supervisors had received any formal on-the-job training. The workshop used classroom training and take-home readings to present 14 lessons on basic nutrition and health concepts. The goal was to present simple, clear lessons that would be easily understood and retained. Pre- and post-test showed substantial knowledge gains, and that the most effective teaching procedure was a combination of lecture using an illustrated chart followed by a demonstration with actual materials.

236. GREINER, T. A preliminary report of a positive outcome of breastfeeding promotion in Ibb, Yemen Arab Republic. Ithaca, New York: Cornell University, 1982. 8p.

A breastfeeding promotion project sponsored by Cornell University and Rockefeller Foundation from 1978 to 1981 apparently was successful in increasing the prevalence of breastfeeding in an urban area, while the prevalence was decreasing in another urban area. The promotion consisted of lectures, group discussions, and a film in maternal and child health centers. The project was staffed by one man, who also held community meetings to organize resistence to the sale of milk powder, and by two women, who conducted home visits and served as breastfeeding counselors in the clinics. The prevalence of breastfeeding of infants 3 months old rose from 52% to 83%.

237. GUTHRIE, G.M. Prizes for prudent mothers. Development Forum, vol. 9, no. 3, 1981, pp. 6-7.

Mothers in 3 villages in the Philippines were taught 5 rules about child care: continue breast feeding, supplement breast milk, plant green leafy vegetables, obtain weight gain in children, and visit the health center monthly. In one village, mothers each month received "health coupons," redeemable for food, soap, or clothing, for each rule they followed. In the second village, mothers received color photographs for themselves and their babies, if the baby gained weight satisfactorily. In the third village, nutrition education service and medical care were available, but no reward system was established. Babies in the first two villages grew equally well and better than those in the third village. The two reward systems both worked, and equally well.

238. KARUNANAYAKE, H.C. Community-level nutrition interventions in Sri Lanka: A case study. Food and Nutrition Bulletin, vol. 4, no. 1, January 1982, pp. 7-16.

This article presents the general state of nutrition in Sri Lanka and describes the national-level programs, including a food stamp scheme, a school-biscuit distribution project, and the "thriposha" program. Thriposha is a fortified food, made up of corn and soy milk powder, maize and soy flour, distributed to children, mostly preschoolers, who have second or third degree malnutrition. At the community level, the thriposha program is run by volunteers in charge of the preschools. They typically have nine years of schooling and receive a special nutrition course that covers child development, principles of nutrition, organization of community kitchens, basic health care, and preventive measures. The program actively involves the mothers in the provision and preparation of the food, as a means of instructing them in the nutritional needs of their children. The article also describes the Norwegian Save the Children (Redd Barna) and U.S. Save the Children nutrition programs and mentions that they include nutrition education components, without describing them in detail.

239. LAMBERT, J. Politique nationale alimentaire et nutritionnelle de la Papouasie-Nouvelle-Guinée. *Aliment. Nutr.*, vol. 6, no. 1, 1980, pp. 32-37.

Nutrition studies and campaigns conducted in Papua New Guinea since 1947 are described in this paper, which identified protein-calorie malnutrition among children as the principal nutrition problem of the nation. The current national applied nutrition program uses radio, plays, debates, slogans, and posters to promote nutrition messages. A study of the combined effects of the mass media campaign and a school feeding program estimated that the malnutrition rate could be reduced by 30%. Nutrition rehabilitation centers at hospitals teach mothers to make the best use of cheap local resources. The sale of infant feeding bottles has been legally limited to sale by medical prescription to mothers who can demonstrate that they have the means and knowledge to bottle feed correctly.

240. MANOFF INTERNATIONAL, INC. *Nutrition Communication and Behavior Change Component, Indonesian Nutrition Development Program*. Washington, D.C., Manoff International, Inc., 1983. 5 volumes.

This series presents in great detail the process of developing, implementing, and evaluating a project to improve young child nutrition. Using social marketing techniques, local needs and attitudes were explored, and alternative solutions were tested. For example, proposed recipes for a weaning food were not only explained to mothers who were then questioned to determine whether they understood the message, but also the mothers helped in the preparation of the foods and were asked to prepare the foods at home for a week. At the end of the week, the recipes were again tested and adapted. This exhaustive attention to all details resulted in a project that succeeded in improving the nutrition status of the children through education alone. A summary of the project is presented by Mantra, 1982 (no. 241).

241. MANTRA, I.B.; MARKU, T.; DOLAKSARIBU, D. *Project Description: Nutrition Education and Behavior Change Component Indonesian Nutrition Improvement Program*. Washington, D.C., Manoff International, Inc., 1982. 27p.

This project, part of the Indonesian Nutrition Improvement Program, was conducted in four stages, beginning in 1977: (1) training and equipping 2,000 volunteer village nutrition workers; (2) initiating a weighing program in each village, reaching 52,000 children; (3) developing a communications strategy, based on research in the community and developing and producing materials; and (4) dissemination of the materials, with continuous implementation and evaluation. This paper describes in detail the development of the communications strategy, providing a case study of the application of principles of concept testing, establishing behavior change objectives based on household interviews, community participation in development of messages and materials, and design of mass media (radio) scripts. Examples of the scripts, posters, and other materials are provided. Evaluation of the project in 1981 found that parents in the project area villages knew more specific information about nutrition problems and what to do about them, that they offered their children more of the foods stressed in the messages, that their children had higher protein and calorie intakes, and that their children grew significantly better after 5 months of age than children of families participating in other nutrition programs. Thus, this project demonstrated the effectiveness of this method in improving nutrition knowledge, behavior, and status, using nutrition education alone, without food supplements or other common adjuncts to education. The project is described in greater detail in Manoff International, Inc., 1983.

242. MENON, K.; RAU, P.; DAMODARAN, M.; NAIDU, A.N. An investigation into the reasons for mothers not utilising home made weaning foods. The Indian Journal of Nutrition and Dietetics, vol. 17, 1980, p. 437-42.

In this study, a supplement was provided free for several months and was then offered for sale in local shops. The majority of the mothers who had used the free product but who did not purchase it in the shops said that they could not afford it, although they were spending an equivalent amount on children's snacks.

243. MITTAL, M.; CHARI, P.S.; RANA, A. Educational needs of rural mothers of Lagret village in Himachal Pradesh for forming desirable food habits in children of 4-6 years of age. Indian Journal of Nutrition and Dietetics, vol. 19, no. 1, January 1982, pp. 14-19.

244. NEWMAN, J.M.; CONTENTO, I.; KRIS, E. Perspectives on food and nutrition in the People's Republic of China. Journal of Nutrition Education, vol. 13, no. 2, June 1981, pp. 43-45. bibl.

245. OROZCO, R.; TORRES, E.; NUBE, M., eds. Proceedings of the first FNP Workshop towards Strengthening Food and Nutrition Components in Development Programs (in South East Asia), 20-24 April 1981, Los Banos, Philippines. FAO; University of the Philippines; Netherlands Universities Foundation for International Cooperation, 1981. 144p.

246. QUIMPO, C.F.; VALDECANAS, O.C. Radio-print synchronization and participation in the nutrition school of the air. Philippine Journal of Nutrition, vol. 32, no. 2, April-June 1979, pp. 99-107.

The Food and Nutrition Institute of the Philippines conducted a synchronized radio and print media campaign to determine whether they would enhance one another. Weekly radio broadcasts were synchronized with presentation of the scripts in popular magazines; coupons for enrollment in the nutrition school were presented. After 16 weeks, a test administered to 114 of the 130 graduates showed that although course completion rates were greater for those who used both media, attitudes were better among those using only one medium. This was attributed to the manner of presentation, consistency problems, and continuity needs. Scores were high on knowledge, attitudes, and practices, and there was a significant relationship between knowledge and practice scores. Knowledge was related to occupation and age; attitudes were influenced by geographic origin, civil status, and media habits.

247. RAMPRASAD, V.; WILLIAMS, V.W. Nutrition education through nutrition rehabilitation. Journal of Tropical Pediatrics, vol. 26, June 1980, p. 123-26.

Mothers in 285 families from 14 villages in India were shown a picture of a malnourished child to stimulate discussion of their understanding of the disease. These findings were used as the basis of a nutrition education program at a rehabilitation hospital, where 90 children and their mothers were involved in preparing a nutritionally adequate and affordable food. Followup found that only 20% of the mothers learned the principles of the program; of the children admitted to the unit, 6% had died and 20% left before showing improvement. The rest gained an average of 1.5 to 2 kg. during their stays of two to three weeks.

248. RIZVI, N. Nirog-Project Progress Report. In R.C. Israel, ed., Using Communications to Solve Nutrition Problems. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, in press.

Project Nirog addresses the major cause of malnutrition in young children in Bangladesh—although they are breast fed, they become malnourished when breast milk is no longer sufficient and their mothers do not provide sufficient solid foods. The project used baseline information about mothers' food-related resources, knowledge, beliefs, and practices to develop an educational campaign to direct them to appropriate weaning practices. This paper presents the methodology of the study, particularly the sample selection design and the instruments used in the surveys.

249. SHAH, P.M. Nutrition education through domiciliary management of energy-protein malnutrition. Indian Journal of Nutrition and Dietetics, vol. 15, 1978, pp. 228-232.

This intensive project provided nutrition counseling to all mothers of children under 6 years old in 60 villages in India, with home visits at least once weekly by one of the 29 social workers. Their main message was that increased weight gain resulted in better health; they not only used discussion but also kept growth charts for each child and discussed their implications with the mothers. After one year of program implementation, 500 mothers were surveyed. The following improvements had occurred: the proportion of mothers who knew that rice porridge and soft rice could be used as a weaning food increased from 0.5% to 27.4% and from 0.5% to 28.0%, respectively; and the proportion of mothers who fed their children 4 times a day increased from none to 48%. The effect on "mother substitutes" was greater: the proportion feeding children four or five times a day increased from 38% to 100%, and the proportion who introduced solid foods at the appropriate age increased from 0 to 83%.

250. SHAH, P.M.; SHAH, K.P. Provision of health-nutrition services at the grass-roots level in the Palghar and Kasa Projects and the possibility of their replication. Food and Nutrition Bulletin, vol. 3, no. 1, January 1981, pp. 1-7.

Two community-based health projects were developed in India to address the problem of underuse of health care centers by mothers of malnourished children, and to promote home-based treatment approaches. The Palghar Project, begun in 1972, used social workers to identify malnourished children and provide nutrition supplements to them. Severe cases were referred for hospital care. Birth and infant mortality rates dropped, and the average weight-for-age improved. The Kasa Project, begun in 1974 to replicate the Palghar Project, particularly benefitted working mothers. Nutrient supplements, immunization, family planning, health and nutrition education and environmental sanitation services were provided. Despite difficult conditions such as poor road access, dropouts among trainees, and management problems, the project succeeded in improving children's nutrition status: in the first 18 months of operation, 62.9% of the "very underweight" children improved. There were problems with the transition of the pilot project to government management in 1977, and the authors recommend that future projects work more closely with the government in the pilot stages.

251. SOLON, M.A. *The role of education in the prevention of vitamin A deficiency*. World Health Organization Meeting on Vitamin A Deficiency and Xerophthalmia, Jakarta, 13-17 October 1980. 10p. bibl. (NUT/80.15)

This paper presents an extensive overview of the nature of the vitamin A deficiency problem; the factors affecting the problem; interventions which have been used, with mixed results; and the role of education as a strategy for prevention of vitamin A deficiency. This problem is one uniquely suited to educational intervention because it is commonly found among populations with adequate resources or access to vitamin A sources, but without the knowledge and motivation to use them effectively. A detailed account of the Philippine experience in vitamin A intervention is presented.

252. SUGIHARTO, T. *Vitamin A Week, Lombok-Nusa Tenggara Barat, 3-6 March 1982*. Jakarta, Indonesia, Directorate of Nutrition, Ministry of Health, 1982, 17p.

Blindness attributable to vitamin A deficiency is common in Indonesia despite adequate supplies of vegetables containing the vitamin. The government conducted a promotional campaign to promote vegetable consumption. Posters and a radio campaign were used to inform parents, government personnel, and community leaders about the problem, its causes, and its solutions. The planning and implementation are described in detail, such as including a description of the negotiations for radio air time. An evaluation was planned to determine the comprehension and effectiveness of the materials. Future projects will include teaching a vitamin-A related song in the elementary schools.

253. SUNG, K.T. Integrating nutritional and family planning education with food services in Korean day care centers: An evaluation. *International Health*, vol. 93, 1978, pp. 177-85.

The Integrated Day Care Program, which enrolls 301 of the nation's 501 day care centers, provides nutrition and family planning education as well as food services. Mothers from a random sample of 30 participating centers and 15 non-participants were interviewed about their nutrition knowledge and practices. Participating mothers had better knowledge of weaning practices, nutrients, and the proper foods for babies and pregnant women, and served their children more nutritionally balanced foods. Working participants were more likely to have started feeding milk supplemented with baby foods at about 6 months (58% vs. 22%).

254. TISA, B.J.; BAKER, D. Consultant Report for the South Pacific (November 2-12, 1982): Regional Media Message Workshop. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1982, 112p.

This workshop was an outgrowth of a 1981 conference on maternal and infant nutrition; media specialists and nutritionists from 9 South Pacific countries were convened. The objective was to increase the abilities of participants to design effective nutrition education messages and materials; for most participants, this was the first experience of a nutrition professional working with a media specialist. Contents of this report include individual country papers, the daily schedule and activities of the workshop, and the participants' recommendations, including the need for evaluation of countries' media resources; strategies for optimizing radio timing and resource use; active participation in Ministries' activities, in order to promote their interest; and the development of preliminary materials for pretesting. Followup will be conducted through satellite broadcasts with three-way connections for the country, the regional nutritionist, and the communications specialist. The participants also wanted a followup media workshop in which they could build upon the skills developed here.

255. VALDECANAS, O.C.; CASTANEDA, C.Q.; VICENTE, L.M. Operation Nutribooth--Part II. A follow-up study of San Juan clients. Philippine Journal of Nutrition, vol. 34, no. 2, April-June 1981, pp. 93-98.

"Nutribooths" were set up at strategic public locations in San Juan, Metro Manila, the Philippines, to provide basic nutrition information. An economically representative sample of Nutribooth visitors was surveyed; average age was 37 years, and most were housewives. Topics on which advice was sought ranged from meal planning to nutrition needs during pregnancy. Most respondents had positive attitudes toward the booths, felt that the personnel were knowledgeable and that the information given had been helpful. Dietary changes suggested in materials handed out had been implemented by 87%; 89% said they would recommend the booths to others. Frequency of visiting influenced both knowledge and likelihood of reporting dietary changes. Thus, Nutribooths are a stimulus for seeking nutrition information, promote better family nutrition, and demonstrate a viable community intervention.

256. WISE, A.; BOROUMAND-NAINI, M.; FARIVAR, H.; et al. Prevention of malnutrition in Iran: 1. Vitamins. Acta Medica Iranica, vol. 22, no. 2, November 1980, pp. 165-79. bibl.

The high dietary intake of bread results in deficiencies of riboflavin and vitamins A, C, and D. Improving nutrition status should be approached through several interventions, including the use of vitamin-enriched foods and the promotion of nutrition education, especially through training of teachers.

257. ZEITLIN M.F.; FORMACION, C. The HIID/U.P. College, Iloilo, Evaluation of the International Nutrition Education Radio Advertising Campaign in Iloilo, Philippines, October 1975-October 1976. Cambridge, Massachusetts, Harvard Institute for International Development. 1977. 130p.

This mass media campaign was subjected to rigorous evaluation procedures which found positive correlations between infants' nutrition status and their mothers' nutrition knowledge scores, and their contact with health and nutrition services, even after controlling for parents' education level, income, and other sociodemographic factors. Therefore, the nutrition education had a direct measurable impact on children's weight for age. No impact was found among those receiving only the radio education; revision of the radio campaign could enhance its effectiveness, since messages did not specify quantities of the recommended foods but simply said to feed more.

EUROPE

258. BUHL, F. The nutritional education of the public: French experience. Journal of Human Nutrition, vol. 34, no. 6, December 1980, pp. 439-444.

The French national nutrition education campaign was begun in 1977, sponsored by the French Committee on Health Education, a private organization financed with public funds which trains public health personnel and publishes documents for both the general public and educational institutions. The focus in the first year was maternal and infant nutrition, including the promotion of dietary guidelines for expectant mothers. In 1978, the campaign introduced a card game, "Eat Right," which taught basic food groups, with emphasis on fresh fruits and vegetables and on avoidance of excessive fat, sugar, and salt. The success of this program has stimulated interest in several other countries with similar nutrition problems. The 1979 campaign focused on feeding children aged six to twelve years, employing distribution of support materials and mass media spots. The goals were to teach children to be responsible for their own eating and to stimulate family education on proper nutrition. There is also a booklet for health workers. The campaigns have been well received, although there had been no formal assessment of their impact on the national diet at the time of this publication. It is hoped that a national nutrition policy will be developed containing concrete objectives, appropriate interventions, and organizational and training requirements for their implementation.

259. DEBRY, G. La campagne d'information du public sur l'alimentation de l'enfant. C.M., vol. 102, no. 36, 11 October 1980, p. 5252-61.

260. DEBRY, G. Les campagnes d'information du public en nutrition. C.M., vol. 102, vol. 4, 26 January 1980, p. 323-25.

261. HOCHSTRÄSSER, B.; ABELIN, T.; DIETSCHI, S.; et al. Ein verhältenstherapeutisches training zur gewichtsreduktion, In Wissenschaftliche Arbeitstagung 1981: Aktuelle Probleme der Sozial- und Präventiumedizin. Zurich, Sozial und Präventiumedizin, vol. 26, no. 5, October 1981, pp. 354-56.

262. HOWIE, S.M. Nutrition education for children under 12 years old in North Staffordshire. Human Nutrition: Applied Nutrition, vol. 37A, no. 1, February 1983, pp. 54-57.

263. KIRK, T.R. Appraisal of the effectiveness of nutrition education in the context of infant feeding. Journal of Human Nutrition, vol. 34, no. 6, December 1980, pp. 429-438.

England's Department of Health and Social Security (DHSS) published the following recommendations to promote breastfeeding: breast feed for the first 4 to 6 months of life; introduce solid food only after 4 months; and avoid salt and sugar in weaning foods. Before and after widespread dissemination of these guidelines, surveys were conducted of mothers of infants 4 to 12 months old who used child welfare clinics. The second group of mothers had received much more information, especially encouragement to breastfeed. Much of the information about weaning was incorrect: many mothers were told to begin weaning earlier than the officially recommended four months; 30% of mothers in both groups were advised to add sugar to foods; and no mother was advised against adding salt to foods. Breastfeeding increased from 44% to 68%; the increase was greater among middle-class mothers than lower-class. Promotion of breastfeeding was apparently successful, but more effort should be conducted in weaning education for professionals as well as mothers.

264. LAMM, G. The Cardiovascular Disease Programme of WHO in Europe. Copenhagen, Denmark, World Health Organization Regional Office for Europe, 1981. 143p. bibl. (Public Health in Europe Series No. 15)

In response to the "epidemic" of mortality from cardiovascular causes, WHO in the 1960s initiated a program of research and prevention. This booklet presents the history, operations, and results of the program from 1968 to 1980. Research revealed that the incidence of CHD could be reduced by relatively cheap and simple methods of addressing four major risk factors: high blood pressure, smoking, elevated blood cholesterol, and overweight. Programs in 10 countries included primary prevention such as changing smoking and eating habits and bringing modern rehabilitation centers closer to the patients. This document, directed to health professionals, provides descriptions of the registration and surveillance system, the role of mobile coronary units, the long-term effects of coronary bypass surgery, and recommendations for research and the role of social services in cardiovascular disease control.

265. LAURANCE, B.; LAWRIE, B. Health and nutrition education unit in a children's hospital. British Medical Journal, vol. 2, no. 615, 25 November 1978, pp. 1469-71.

266. REGINSTER-HANEUSE, G.; DEGIMBE, J. Rapport: l'Education nutritionnelle à l'école dans les pays de la Communauté Européenne. Luxembourg, Commission des Communautés Européennes, 1981. 88p. bibl.

LATIN AMERICA AND CARIBBEAN

267. BERGGREN, G.G. Home-prepared food supplements, mothercraft centres, and nutrition in Haiti. Food and Nutrition Bulletin, vol. 3, no. 4, October 1981, pp. 29-33.

The high rate of malnutrition among young children was determined to be attributable in part to mothers' choices of weaning foods. A commercial weaning food had proved unaffordable, so mothercraft centers developed a weaning food based on local grains (rice, corn, sorghum) and beans. Mothers learned to prepare and use such foods effectively. "From 1968 to 1975 (hospital) admissions for severe protein-energy malnutrition fell to less than half their initial level in the 100,000-person district served by Mothercraft Centres (while) admissions from nearby districts...remained constant or tended to rise." These effects persisted even after the centers were closed. The authors recommend that nutrition education for urban mothers should teach "how to buy the best combination of nutrients per unit of cost" and that rural efforts should promote the use of home gardens.

268. COLLE, R.D.; COLLE, S.F. The communication factor in health and nutrition programmes: A case study from Guatemala. Cajanus, vol. 11, no. 3, 1978, pp. 151-96.

This long and detailed report presents a case study of the development and evaluation of a mass media education campaign in Guatemala. The project focused on one "finca" (plantation). Baseline information collected included: the owner's policy concerning the health and nutrition of his workers; knowledge of the legal requirements of the landlord; health and nutrition problems of the community; and resources such as professionals, women of the "finca," and experts such as the local schoolteacher. Finally, personal exploration of the community provided additional insights. Some research had already been done on similar communities' attitudes; this, combined with specifics about this "finca," permitted the development of a communications strategy. This article provides a detailed account of the methods of selecting media, developing the actual messages to be used, implementing the strategy, producing the materials used, conducting an evaluation to determine the extent of the project's influence on the women, and using the results of the evaluation for improving the program. Appendices present the health and nutrition survey questionnaires, the nutrition and health message contents of the educational program, a chart outlining the analysis of the survey, and the evaluation questions. The medium selected for the study was portable, battery-operated audiocassette players. The article discusses problems encountered, such as lack of batteries and potential participants' fear of breaking the machines, and how such difficulties were overcome to result in a project that used an innovative technique as a means of motivating participation and outreach.

269. COMITE GUADELOUPEEN POUR LA JOURNEE MONDIALE DE L'ALIMENTATION. *Pour Mieux se Nourrir en Guadeloupe*. Comite pour la Journee Mondiale de l'Alimentation, 1981. 52p.

270. DEANDRACA, A.M.; MAGENDZO, S. *El Programa de Fomento de la Lactancia Materna: Una Experiencia Piloto en el Area Oriente de Salud de Santiago. (The Program to Promote Breastfeeding: A Pilot Project in the Eastern Health Sector of Santiago.)* Santiago, Chile, National Food and Nutrition Council (CONPAN), 1978. 285p.

The "interpersonal" approach to promoting breast feeding was tested in one prenatal clinic in 1974, in an effort to reduce infant malnutrition. The approach included group presentations to pregnant women and new mothers, detailing the advantages and techniques of breast feeding; a monthly review of infants for the first six months of life, and consultation with new mothers by nursing personnel and trained volunteers. Results were that breast feeding was prolonged and morbidity decreased, so the program was expanded to six clinics in 1975. This document presents a detailed evaluation of this expanded test. Elaborate statistical procedures assured credibility of the findings. The evaluation found that children who had never participated in the program had been at greater risk of malnutrition from birth, because of factors such as mother's age and prematurity. They and children who dropped out of the program did not breast feed as long as those who participated fully. Little effect was detected on the average number of months of exclusive breast feeding or on the percent still breast feeding at six months old. Breast fed infants grew better up to 3 or 4 months of age, but there was little or no advantage in those breast feeding 6 months or more. Birthweight correlated with duration of breast feeding; heavier infants breast fed longer. The study recommends that efforts to increase the nutritional status of pregnant women and new mothers be implemented and evaluated as part of future breast feeding promotion programs.

271. DEOLIVEIRA, J.E.D; et al. Reaching preschool children through a community food program. *Ecology of Food and Nutrition*, vol. 9, no. 4, August 1980, pp. 223-228.

This project, conducted in a periurban area around the city of Riberao Preto in Southern Brazil, provided both supplementary milk and nutrition education. Of the 368 families in the area, 84% participated in the study. Milk was provided to stores by the local pasteurization plant, and families with small children were given coupons worth two glasses of milk per day; the children consumed the milk at the stores. Mothers and children attended orientation meetings at which the children were told stories demonstrating the importance of health, hygiene, and food, especially milk. The role of store owners in preventing malnutrition was stressed. Local workers conducted the classes and controlled the program. At the end of the 9-month study, 45% had dropped out, but almost all this attrition was due to family relocation. Of the children remaining, 80% showed regular attendance. Absenteeism was due to distance from the stores or children's distaste for the milk. Attendance at the educational meetings was much higher for children than for their mothers. This program was effective in reaching its target audience economically and had built-in monitoring mechanisms, such as redemption of the stores' coupons.

272. DE GODINEZ, C.M. *Consultant Report for Guatemala: A Nutrition Component for Inclusion in a Guatemalan Ministry of Health Training Manual for Midwives*. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1980. Volume II. In Spanish.

This report presents the consultant's suggestions for incorporating nutrition into a training curriculum for midwives being developed by the Guatemala Ministry of Health. It includes an *Informe Final* (list of general recommendations), *Guia para la Enfermera Responsable del Programa* (from the original Ministry manual), a summary of the reactions of midwives and nurses to the training program, and additional specific recommendations for developing the nutrition technical content of the manual and appropriate support materials.

273. EVENSEN, S. *An Inventory of Nutrition Education Activities in Belize*. New Orleans, Department of Nutrition, Tulane University, School of Public Health and Tropical Medicine, 1981. 175p. bibl.

This document presents an exhaustive, thorough, and exemplary survey of nutrition needs, status, programs, and resources in Belize, a Central American country of 144,000 people. Noting that surveys of nutrition education activities were virtually nonexistent and that there was no protocol for national nutrition education inventories, the author spent 3 months studying this nation in detail. He presents findings of health and nutrition surveys, identifies institutions that deal with nutrition education, and indicates a contact person at each, as well as describing nutrition education activities and institutions' purposes. Extensive appendices present the survey instrument and findings. Finally, there are an analysis of the discrepancies between existing nutritional problems and available education programs, and recommendations for each of the institutions surveyed and for the nation as a whole. Recommendations at the national level cover planning, the need for coordination and collaboration, training of personnel, teaching aids, increasing and improving manpower, use of the mass media, development of new programs and activities, and evaluation. Although this methodology might not be relevant at the national level for larger populations, it presents an exemplary format for regional or local work in developing nutrition education resources.

274. FEDERACION DE DESARROLLO JUVENIL COMUNITARIA, INC. *Programa para Elaboración de Métodos para la Enseñanza de Salud/Nutrición: Resultado Primer Taller de Metodología Participativa para el Desarrollo de Programas Comunitarios. Villa Mella, Agosto 8-15, 1979*. Santo Domingo, Dominican Republic, 1980. 39p.
This report presents the proceedings of the first of three training sessions held for "health promoters," who work at the community level. The first part of this session was an analysis of participants' current working conditions, to serve as a basis for planning. The second part introduced the concepts of participatory education, and the third was the development of plans for action and preparation of materials for pretesting in the community. The report includes examples of the materials and photographs of the sessions.

275. FRANCE, S.O. La atención primaria en el servicio de salud metropolitano-oriente. (Primary care in the East Santiago Health Service). Cuadernos Medico-Sociales, vol. 22, no. 3, September-December 1981, pp. 31-35, bibl.

The interdisciplinary health teams used in the maternal and child health services in Santiago, Chile, provide vaccinations, pregnancy surveillance, dental care, and systematic health checkups. The nutrition program provides rehabilitation for the malnourished population: 11% of the children are mildly malnourished; 0.9%, moderately; and 0.03%, severely.

276. FUNDACION PARA EL DESARROLLO COMUNITARIO. Programa para Elaboración de Métodos para la Enseñanza de Salud/Nutrición: Resultado Segundo Taller de Metodología Participativa para el Desarrollo de Programas Comunitarios. Las Matas de Farfan, 26 Noviembre-7 Diciembre 1979. Santo Domingo, Dominican Republic, 1980. 62p.

This seminar, the second in a series of three held for community health workers, was conducted in a semi-rural community which served as a test site for materials development and practice with participatory education. Participants presented the work they had done since the first session, new materials were presented, and, finally, specialized materials and work plans were developed. The report presents the activities of the workshop in detail, including lesson plans and objectives, examples of materials tested, an evaluation questionnaire, and guidance in technical aspects of community nutrition, such as determining children's ages.

277. FUNDACION PARA EL DESARROLLO COMUNITARIO. Programa para Elaboración de Métodos para la Enseñanza de Salud/Nutrición: Resultado Tercer Taller de Metodología Participativa para el Desarrollo de Programas Comunitarios. Haras Nacionales, Villa Mella, 15-25 Abril, 1980. Santo Domingo, Dominican Republic, 1980. 59p.

This report presents the proceedings in the third and final session of workshops held to train community health promoters in nutrition and nutrition education skills. The stated objective of this session was to enable the participants to plan and evaluate projects that would help their communities identify, analyze, and resolve their major health and nutrition problems. The program included four parts: individual community plans and resources; project planning; use of materials, including adaptation; and technical nutrition information such as food values and the causes and treatment of diarrhea.

278. GREINER, T.; LATHAM, M.C. The influence of infant food advertising on infant feeding practices in St. Vincent. International Journal of Health Services, vol. 12, no. 1, 1982, pp. 53-75.

This study was conducted in response to the infant formula industry's contention that there was no proof that infant food advertising measurably influenced infant feeding practices. A questionnaire was administered to mothers of 200 children 1 to 2 years old, nearly the whole sample in each of two towns. The typical infant feeding pattern, largely a combination of both breast and bottle feeding, had existed for decades. Infant food advertising had declined in the years immediately preceding the study, and bottle feeding was well established, so it was difficult to measure the influence of promotion. There was no statistically significant association between brand names of advertisements recalled by the mothers and the brands actually purchased. Formula was considered a food by 46% of the mothers; a tonic, by 47%; and a medicine, by 7%. The results of two multiple regression analyses suggested that the more a mother was influenced by infant food advertising, the sooner she began to bottle feed and the sooner she stopped breast feeding. The author concludes that this indicates a need for the cessation of all promotion of commercial infant foods.

279. GUERI, D.M.; JUTSUM, P.; WHITE, A. Evaluation of a breast-feeding campaign in Trinidad. Bulletin of the Pan American Health Organization, vol. 12, no. 2, 1978, pp. 112-115.

This article describes the conduct and evaluation of a mass-media campaign initiated in 1974 by the Housewives' Association of Trinidad and Tobago. During the five weeks of the campaign, 5 posters appeared in daily newspapers and 6 radio spots were broadcast 4 times daily. During the 6 weeks immediately following the campaign, interviews were conducted with mothers delivering babies at the two largest public hospitals. Knowledge scores were highly positively correlated with frequency of attendance at prenatal clinics. A high proportion of the mothers (93%) recognized at least one of the newspaper advertisements, but most had read only the large-print slogan ("Every baby deserves the breast"). Nevertheless, an inverse correlation, significant at the 10% level, was found between the recognition score and the introduction of bottle feeding before the age of two months. Since the sample was fairly homogeneous for education and economic status, the difference in knowledge is probably attributable to the campaign.

280. HARDY, E.E.; VICHI, A.M.; SARMENTO, R.C. Breastfeeding promotion: effect of an educational program in Brazil. Studies in Family Planning, vol. 13, no. 3, March 1982, p. 79-86, bibl.

Breastfeeding prevalence was particularly low among younger, poorly educated women with young husbands, probably because this group was most susceptible to environmental influences on their feeding choices. Health workers were successful in promoting a higher rate of breastfeeding, particularly through education during the prenatal period.

281. INFORME DEL TALLER SOBRE METODOLOGIA DE EDUCACION NO FORMAL EN SALUD Y NUTRICION, BASADA EN LA PARTICIPACION DE LAS COMUNIDADES LLEVADO A CABO EN LA CIUDAD DE GUATEMALA, 3-12 November 1980. Guatemala, Consultoria Regional de Salud y Nutrición (CORSANU), 1981. 34p.

This report presents a day-by-day account of a workshop held to introduce the SARAR nutrition education principles to a group of professionals in Guatemala. Dr. Srinivasan's introduction to the session delineates the principles of the system: (1) planning educational experiences that are based on participants' abilities to draw their own conculsions through creative, analytical, and self-directed work; (2) using materials to stimulate and motivate participation; (3) forming small groups in which members can express themselves and experiment with new forms of participation; and (4) stressing the importance of evaluation as the basis for future action. This report shows how the workshop was conducted along these principles to introduce them to the participants.

282. KING, K.W.; et al. Preventive and therapeutic benefits in relation to cost: Performance over 10 years of Mothercraft Centers in Haiti. American Journal of Clinical Nutrition, vol. 31, 1978, pp. 679-690.

Most of the Mothercraft Centers in Haiti were run by the Nutrition Bureau of the Department of Health between 1964 and 1975. The author presents this study of the Centers in order to make a description of their operations more readily available and to compare them to other applied nutrition programs. The preventive effect was judged to exceed the therapeutic effect: the average center treated 105 children each year for malnutrition, but prevented malnutrition in 306 of their younger siblings, at a cost of U.S. $4034 per year per center. The centers were limited in their impact on malnutrition because of factors such as infections and mothers' lack of motivation or ability to learn in the centers.

283. KUBOTA, N.; et al. Avaliacão de material educativo. Adequacão de quatro volantes sobre alimentacão da criança de 10 a 12 mêses de idade. Rev. Saúde Publica, vol. 14, 1980, pp. 101-122.

This article describes the field testing of four pamphlets on infant nutrition developed for the Child Care Program of the Department of Health of the State of Sao Paulo, Brazil. Mothers and auxiliaries were interviewed to determine whether they understood the materials and thought they were practicable. Although three of the leaflets were well-understood, both mothers and auxiliaries questioned the applicability of their recommendations. The field test thus identified some limits in comprehension and feasibility, and the report contains recommendations on improving the materials for general application.

284. OKWESA, B.A. Mass media and community-centered approaches in Jamaica's nutrition education programme. Cajanus, vol. 15, no. 1, 1982, pp. 19-27.

This article, illustrated with photographs, describes the planning, implementation, and evaluation of a national integrated health and nutrition education program. The goal was to improve the nutrition status of children and pregnant women; the objectives included reducing anemia among women and decreasing the incidence of malnutrition among children under 4 years old. Planning, by a committee of representatives from public and private agencies, was based on a baseline survey of nutritional needs. Most mothers began feeding supplementary foods early, before 4 months, and the foods were often nutritionally inadequate. Data on resources included household amenities and major sources of health-related information. The results led to planning of three interventions: (1) educational seminars for health professionals and community leaders; (2) a mass-media campaign directed at the general public;

and (3) household counseling by field workers. Themes included advantages of breast feeding, improved weaning practices, and nutritious foods for pregnant women. Media included billboards, bumper stickers, and calendars. Operation of the program ended in 1979. Evaluation of the program showed that although the objectives were well written, "there was no worked-out and well-defined strategy in accordance with the aims of the programme," and no system for collecting impact data, although some efforts had apparently been more effective than others. The project was revised and reinstituted in 1981, with greater emphasis on family planning, maternal and child health services, and infant immunization.

285. OVERHOLT, C.; SELLERS, S.G.; MORA, J.O.; et al. The effects of nutritional supplementation on the diets of low-income families at risk of malnutrition. American Journal of Clinical Nutrition, vol. 36, no. 6, December 1982, pp. 1153-61. [Also published in French and Spanish]

This study enrolled 456 families in low-income neighborhoods of Bogota, Colombia, who were judged at risk of malnutrition. Six treatment groups received various combinations of free medical care, food supplements, and home education. Home education alone was found not to influence consumption, presumably because of economic constraints, since families receiving both education and supplements did improve their diets, showing that the supplement was used as such and not as a substitute for foods otherwise purchased. Although "supplementation alone enhanced child growth, supplementation and education together had a significantly greater effect" (p. 1161).

286. PILEGGI VINHA, V.H.; OLIVEIRA, J.E.D. Programa comunitario de alimentaçâo, Boletin de la Oficina Sanitaria Panamericana, vol. 90, no. 3, March 1981, pp. 189-99.

This report describes community food programs in suburban Ribeiro Preto, in the State of Sao Paulo, Brazil, serving 555 preschool children with food supplements and nutrition education for mothers.

287. POLLIT, E. Simposio Regional sobre la Pobreza Crítica en la Niñez. Santiago, 1979; Proyecto Interinstitucional de Probreza Critica en America Latina. Estudios experimentales y programas pilotos de intervencion y alivio a la ninez pobre en America Latina: Un examen de lo avanzado. Santiago, CEPAL, 1979. 39p.

288. PRAUN, A. Nutrition education: Development or alienation? Human Nutrition: Applied Nutrition, vol. 36A, 1982, pp. 28-34.

"Outsiders" conducting nutrition education in developing countries are usually ineffective, because they do not understand the context in which they are working and do not learn about the habits and concerns of the population. Straight delivery of information, even on the chance that it is relevant, is not sufficient to induce constructive changes. Nutrition educators must revise their attitudes in a very basic way, to include community participation in designing and conducting their programs. This paper presents a detailed description of the effective design and conduct of a community-based project in an unspecified Central American country. The author describes her initial frustrations and failures as well as her success in establishing a project designed on Freire's principles of increasing awareness.

289. SELLERS, S.G.; MORA, J.O.; SUPER, C.M.; et al. The effects of nutritional supplementation and home education on children's diets. Nutrition Reports International, vol. 26, no. 4, October 1982, pp. 727-41. [Also published in French]

This study, conducted in Colombia, found that nutrition supplements and home-based nutrition education did not have much effect on breast feeding rates but did influence weaning practices, resulting in a significant improvement in the nutritional intake of children 18 to 36 months old. The possible implications of this effect for the development of the children are discussed.

290. SIMMONS, W.K. Nutritional anemia in Jamaica: 2. Programme for its prevention and control. Cajanus, vol. 14, no. 1, 1981, pp. 20-30. bibl.

In order to cope with its high rate of iron-deficiency anemia, Jamaica fortifies flour with iron and is considering fortifying sugar and corn meal. Other activities include distribution of iron supplements to those most at risk, such as pregnant women, and anti-parasite campaigns. Complementing and supplementing these activities are nutrition education programs. The Nutrition Unit of the Ministry of Health conducts nutrition education courses for District Midwives, public health nurses, and community health aides, who in turn advise women who are pregnant or lactating, or who have preschoolers. They particularly encourage foods high in iron or in ascorbic acid (vitamin C), to enhance the body's ability to absorb the iron in foods.

291. SRINIVASAN, L.; SAWYER, R. Consultant Report for Guatemala (October 25-31, 1980). Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Save the Children Federation, 1980.

The senior author has developed a participatory approach to solving nutrition problems and a series of techniques for eliciting the participation of villagers in the design of nutrition education programs that affect them. Her approach was first developed in conjunction with Save the Children Federation projects in Indonesia and the Dominican Republic. This report presents the application of these techniques (in collaboration with an additional expert in non-formal education) to workshops held to train trainers in learner-centered techniques in nutrition education. The training included: experiential exercises to acquaint participants with the techniques to be used; identification of health, nutrition, and general problems to be addressed; development and adaptation of educational materials; comparison of four non-formal education models; and technical education of the participants in specific health and nutrition topics. The second phase included field work in materials development; the third, review and plans for follow-up.

292. TOUREAU, S.; PIZZARELLO, L.; LEONE, S.E. Evaluation of a Program to Prevent Xerophthalmia in Haiti. New York, Helen Keller International, 1979. 99p.

This massive campaign to prevent child blindness in Haiti focused on adequate nutrition, because vitamin A deficiency was identified as a major cause of child blindness. Activities included promotion of massive supplementation with vitamin A capsules; radio messages; and direct education provided by district auxiliary nutritionists at the capsule distribution centers. Evaluation of the radio campaign was complicated by the effects of popular awareness and support of the capsule distribution campaign. A flip chart developed for field use has been distributed world wide as a proptotype aid in prevention of xerophthalmia. Since the 1974-75 initial assessment of need, there has been a "tenfold decrease" in ocular symptoms of vitamin A deficiency.

293. WEBB, R.E.; FOUGERE, W.; PAPILLON, Y. An evaluation of the educational benefits of nutritional rehabilitation centres as measured by the nutritional status of siblings. Journal of Tropical Pediatrics, vol. 21, no. 1, 1975, pp. 7-10.

Malnourished children treated at rehabilitation centers in Haiti gained in their relative weight-for-age during their stays in the rehabilitation centers and had made further gains 21 months after discharge. Paired siblings of these children had better nutrition status than the older child had when admitted for malnutrition. A comparison of pairs of control children showed no significant differences between them in weight status. The authors concluded that the superior status of the younger siblings of the malnourished children is attributable to the educational effectiveness of the rehabilitation centers.

294. WIT, J.M.; DAVIES, S.C.V.A A home- and clinic-based growth chart for Dominica. Cajanus, vol. 15, no. 1, 1982, pp. 42-52.

The home-based "Child Health Passport" was introduced in 1980 after consultation with health care personnel. Older chart designs were modified to include nutrition education messages, such as monitoring infants' food intake and reminders of the appropriate ages at which to introduce specific foods. Pretesting revealed mothers' confusion about some of the messages and their objection to having contraception information recorded on home charts. The charts were designed to minimize the amount of writing to be done; as many items as possible are simply to be checked off. Regionally, home-based charts are reported to be lost less frequently than health records and provide mothers with a feeling of responsibility for and participation in their children's health care. Such charts also facilitate home visits and are appropriate in the many areas where people move frequently and deal with many different health care providers.

295. WRIGHT, M.; HORNER, M.R.; CHARINI, L.H. Approaches for increasing soybean use by low-income Brazilian families. Journal of Nutrition Education, vol. 14, no. 3, 1982, pp. 105-107.

This campaign, directed at families with preschool children, included both education and distribution. Two approaches were used in the education component: group discussions were found more effective than lecture or individual information approaches to changing food habits. Initially, none of the families used soy products. After education and one month of receiving free soybeans, 90% of the participants had used the soybeans at least occasionally; 40% had used them within the preceding 24 hours. After 4 months, soybeans occurred in 25% of the 24-hour recalls. The authors assume that participants would not have been so successful in incorporating a new food into their diets without the education, but there was no control group receiving only the soybeans and no education in their use.

NORTH AMERICA

296. BLAKEWAY, S.F.; KNICKREHM, M.E. Nutrition education in the Little Rock School Lunch Program. Journal of The American Dietetic Association, vol. 72, April 1978, p. 389-91.

297. BOWERING, J.; LOWENBERG, R.L.; MORRISON, M.A.; PARKER, S.L.; TIRADO, N. Influence of a nutrition education program (EFNEP) on infant nutrition in east Harlem. Journal of The American Dietetic Association, vol. 72, April 1978, p. 392-97.

298. BROWNELL, K.D.; KAYE, F.S. School-based behavior modification, nutrition education, and physical activity program for obese children. American Journal of Clinical Nutrition, vol. 35, no. 2, February 1982, pp. 277-83.

A program using behavior modification and modification of dietary and physical activity habits was applied to obese children in close collaboration with teachers, parents, and the school nurse. Significant weight loss occurred in 95% of cases. The authors recommend further use and development of these techniques.

299. DAELHOUSEN, B.B.; GUTHRIE, H.A. Self-instruction nutrition program for pregnant women. Journal of the American Dietetic Association, vol. 81, no. 4, October 1982, pp. 407-12.

300. DOHRMANN, H. Nutrition education in the Santa Ana teen mother program. Journal of The American Dietetic Association, vol. 74, June 1979, p. 665-67.

This program was established to provide a special array of classes to address the many needs of pregnant minors. The nutrition program, recognizing the poor self-esteem and poor eating habits of many pregnant teens, focuses on the effects of prenatal nutrition on the fetus, since all the girls did want healthy babies. Activities include discussion groups, active maintenance of weight gain charts, food consumption charts, and film strips and movies. The students also plan and prepare their own lunches and operate a cafe in the summer. This is probably the students' only experience with planning and preparing nutritious meals. Results of the program, in its eighth year of operation, show a much lower-than-average rate of low-birth-weight infants, a decreased dropout rate, job placement, and improved nutrition status and self-esteem.

301. DUYFF, R.L.; MARCANTEL, V.; RAY, M.L.; et al. Soup-to-Nuts: a television approach to nutrition education. Journal of the American Dietetic Association, vol. 80, no. 2, Feb. 1982, p. 157-59.

302. ELLESTAD-SAYED, J.J.; HAWORTH, J.C.; COODIN, F.J.; et al. Growth and nutrition of preschool Indian children in Manitoba: 2. Nutrient intakes. Canadian Journal of Public Health, vol. 72, no. 2, March-April 1981, pp. 127-133.

A study of 150 children in two locations, one with a meat-based diet and the other, a more varied diet, found that children in both locations lacked vitamin D in their diets; over half had low iron intakes. Children in the community with a meat-based diet were also lacking other vitamins and minerals. Because access to food is adequate, this problem should be addressed through appropriate nutrition education.

303. FISK, D. A successful program for changing children's eating habits. Nutrition Today, May/June 1979, p. 6.

304. GALST, J.P. Television food commercials and pro-nutritional public service announcements as determinants of young children's snack choices. Child Development, vol. 51, 1980, pp. 935-38.

Children 3 to 6 years old were shown cartoons with commercials for foods with added sugar, of commercials for foods with no added sugar, and pro-nutrition public service announcements, with or without adult comments about the product portrayed. During the four-week study, the children were allowed daily to select a snack after watching television. The intervention most effective in promoting selection of snacks with no added sugar was exposure to commercials for foods without added sugar combined with pro-nutrition public service announcements and accompanying positive comments by an adult co-observer.

305. GOLDBERG, S.J.; et al. Use of health education and attempted dietary change to modify atherosclerotic risk factors: a controlled trial. American Journal of Clinical Nutrition, vol. 33, no. 6, June 1980, pp. 1272-1278.

This investigation was conducted to determine whether nutrition education at the elementary-school level could produce dietary changes that would reduce children's risk factors. Intensive education, focusing on increasing knowledge and access to desirable foods (through school cafeteria offerings and a newsletter for parents) produced increases in knowledge (relative to a control group), but after three years of the study, there were no significant changes between the groups' serum cholesterol, height, weight, or arm skinfold thickness. Failure is attributed to the relatively low risk status of the population and the possibility that the prescribed dietary changes could not influence the risk factors measured.

306. GRIEG, S. Nutrition education in school foodservice in Kansas. Journal of The American Dietetic Association, vol. 73, October 1978, p. 422-28.

307. HICKS, L.E.; LANGHAM, R.A.; TAKENAKA, J. Cognitive and health measures following early nutritional supplementation: A sibling study. American Journal of Public Health, vol. 72, no. 10, 1982, pp. 1110-18.

This study measured the growth and development of 21 sibling pairs in the WIC Program (U.S. Special Supplemental Food Program for Women, Infants, and Children) five to seven years after they had participated in the program. The "early supplement" group had begun in the third trimester of pregnancy; the "late" group, after one year of age. Significant between-group differences were found for a variety of cognitive tests, but height-for-age was the only health measure to be significantly affected; the "early" group was significantly taller. The finding that nutritional supplements can affect later intellectual performance is shown to be compatible with other studies in the literature.

308. KAMHI, M.M. Making diets healthy at P.S. 166. Nutrition Action, vol. 7, 1980, p. 3

This parent-initiated project developed an experiential curriculum based on the U.S. Dietary Goals, reducing sugar, salt, and fat intake. Classrooms and cafeteria were used as learning laboratories; food used for lunches and parties conformed to the new goals. Classroom experiences were used to introduce children to new foods and new ideas, such as having fruit rather than sweets for dessert. Parents and teachers deemed the project a success because of the children's enthusiasm for implementing the new behaviors. The children compiled a notebook on the ways in which the program affected them.

309. KAPLOWITZ, D.D.; OLSON, C.M. The effect of an education program on the decision to breastfeed. Journal of Nutrition Education, vol. 15, no. 2, June 1983, pp. 61-65.

310. RUPPENTHAL, B.; GIBBS, E. Treating childhood obesity in a public school setting. The Journal of School Health, vol. 49, no. 10, December 1979, p. 569-71.

311. SCHURMAN, M. Community teamwork in nutrition education: An example in Canada's North. Human Nutrition: Applied Nutrition, vol. 37A, 1983, pp. 172-179.

The Hudson's Bay Company sponsors a nutrition education program in remote northern communities, both Inuit and Indian. The program identifies nutritious foods in company stores, using the color codes of the Canadian Food

Guide. A nutritionist works with store personnel and community members to promote awareness through activities such as a newsletter and workshops emphasizing nonverbal messages. A small evaluation survey found a high rate of recognition of materials used, and some understanding. Recall of radio and television spots was especially encouraging. The authors conclude that repeated, consistent messages from a variety of sources confirm and reinforce the basic messages and could promote the adoption of new behavior and lead to improved nutritional status.

312. BETTER NUTRITION THROUGH NUTRITION CIRCLES--A PROGRAM MANUAL. Solo, Java, Indonesia, Yayasan Indonesia Sejahtera, 1978. 19p.

This manual provides guidelines for operation of community-level programs. Directed to health and family planning workers, village officials, teachers, and welfare organizations, it begins with a list of criteria to determine the need for community nutrition interventions. The program described provides meals and nutrition education for mothers and their children under 5 years old. Local foods are emphasized, and mothers are helped to develop recipes that will fit into family menus. Implementation includes establishing baseline information, development of community cooperation and involvement, and methods of evaluation. Specific guidelines are provided for coping with common problems such as financial resources and allocation of responsibility for food shopping, cooking, and serving and delivery of the educational component.

313. BOLIVIA. Buena Madre (Good Mother) Project. La Paz, Departamento de Alimentación y Nutrición, Ministerio de Planemiento y Coordinación.

The pilot project for this campaign, conducted among Mothers' Clubs, developed modules on each of four topics of national concern: breast feeding, weaning, childhood diarrhea, and goiter. For each module, three regional versions were developed in the forms of flip charts, posters, radio scripts, and other materials based on local languages and artistic tastes. The campaign was found to have successfully changed attitudes and some practices in rural areas, particularly those related to breast feeding.

314. BRAZIL. Breast Feeding Promotion Campaign. INAN, Ministério da Saúde, Brasilia.

This campaign included materials directed to changing the opinions of policymakers, as well as materials for the urban mother who has no personal support after returning home from the hospital. The theme, "six months that are worth a lifetime," emphasized the importance of breast feeding for six months. Celebrities from sports and television participated in radio and television promotional spots which had various messages on duration, immunological advantages, and the need for family support.

315. BRIDGING THE GAP: A PARTICIPATORY APPROACH TO HEALTH AND NUTRITION EDUCATION. Westport, Connecticut, Save the Children Federation, 1982. 103p.

This handbook describes simple techniques for training field staff and local supervisors to approach communities more sensitively, and to involve them in the process of achieving better health. The steps involved in developing a community-based nutrition education program are: training community health and nutrition workers by selecting the participants and planning workshops; helping communities uncover health and nutrition problems by sensitizng community workers, increasing community awareness, and exploring the problems;

developing learning activities and materials; planning for future activities; evaluation; and followup. Specific examples of materials and activities are given as illustrations.

316. CHILE. Campaña para la Promoción de la Lactancia Materna. Santiago, CONPAN (Consejo Nacional para la Alimentación y Nutrición).

The Chilean breast feeding promotion campaign included posters, television spots, and a manual for health workers. As an ongoing effort of the health system, the campaign addresses rural and urban women of low or middle income, with materials appropriate for each. A booklet for literate mothers invites participation by including spaces for them to fill in personal information. The flip chart to be used in group discussions was thoroughly pretested, contains no printed words, and is a good tool to stimulate mothers' involvement in discussion.

317. COLOMBIA. Campaña para Promover la Lactancia Materna (Breast Feeding Promotion Campaign). Bogota, PAN (Plan Nacional de Alimentación y Nutrición).

This campaign, which ran for about a year and a half, coordinated the efforts of several ministries in its design and implementation. Regional workshops were used to develop local materials and train staff. The materials were produced to professional standards, and were well-received. Anecdotal information indicates that the campaign has influenced professionals' attitudes and the advice they give on breast feeding. Attitudes of urban and rural women have also been improved.

318. COLOMBIA. National Diarrhea Prevention Campaign. Bogota, PAN (Plan Nacional de Alimentación y Nutrición).

This campaign, the first undertaken by Colombia's National Food and Nutrition Program, coordinated interpersonal and radio messages. The emphasis was on prevention and recognition of symptoms of diarrhea; prevention messages focused on breast feeding and improving hygienic conditions. Although the materials were pretested, the campaign itself was not evaluated. The campaign's booklet, "Usted Puede Salvar el Nino de la Diarrea (You Can Save a Child From Diarrhea)," also describes treating an ill child with oral rehydration solution.

319. DOMINICAN REPUBLIC. Mass Media Nutrition Education Campaign. Santo Domingo, SESPAS (Secretaria de Estado de Salud Publica y Asistencia Social), División de Nutrición.

This campaign relied entirely upon radio messages to encourage mothers to improve their weaning practices, to treat diarrhea appropriately (with oral rehydration), and to use health services. The scripts were designed to appeal to mothers' sense of self-sufficiency and are stated simply in behavioral (rather than theoretical) terms. The principal character of the radio spots is Rosa, a mother who is proud to always be learning something and to be able to manage her household affairs herself. Although the spots do not employ a slogan, their appeal to mothers to improve their children's health with what they have or can do at home, and the use of the central character give them a campaign sound. Rosa often says she will pass along new information to a friend or neighbor.

320. DUMOUCHEL, D. Nutrition Education for the Well Elderly: An Annotated List of Resource Materials and Canadian Programs. Vancouver, Canada, Health Promotion Directorate, Department of National Health and Welfare, rev. ed., 1980. 102p.

321. ECUADOR. Mejores Madres, Mejores Ninos (Better Mothers, Better Children). Quito, Instituto Nacional de Nutrición, Ministerio de Salud.

This campaign used posters and television spots, but relied principally on radio spots. The audience was rural families, and the topics included diarrhea and oral rehydration, breast feeding and weaning, malnutrition, and iodine deficiency. The radio spots were dialogues, mostly between a doctor and a mother; each discussed the consequences of a deleterious health practice and the extra work or expense of a new practice. Household interviews of the project's impact found that the campaign was most effective in creating awareness of the causes of diarrhea and in getting people to cover their drinking water. Awareness of the importance of iodized salt also increased; in goitrous areas, sales of iodized salt increased.

322. FAO. Food, Nutrition, and Agriculture: Guidelines for Agricultural Training Curricula in Africa. Rome, Italy, Food and Agriculture Organization of the United Nations, 1982. 213 p. (Food and Nutrition Paper no. 22)

Agricultural development programs often fail to take into account the eventual nutritional impact of their activities. These curriculum guidelines present two options for introducing nutritional considerations into the curricula of agricultural students at the diploma and certificate levels. Food and nutrition may be taught as a separate course, allowing for unity and completeness, or they may be worked into existing courses, permitting adaptation to the needs of differing institutions. Both alternatives involve teaching methods of increasing food production and improving the availability and distribution of the products. Some of the technical skills and knowledge include nutritional considerations for designing agricultural and rural development projects, and how to select and implement appropriate nutrition interventions.

323. GRIFFITHS, M.; MANOFF, R.K.; TIGHE, J.P.N.; ISRAEL, R.C.; SHARP, L. Guide to Mass Media and Support Materials for Nutrition Education in Developing Countries. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1984. 116p.

This guide presents over 100 exemplary materials, mostly from developing countries, with reviews and illustrations. Materials are organized by topic: general, maternal, young child (including breastfeeding and weaning), growth monitoring, and specific nutrition-related health problems. Supplementary sections present principles of materials development, a game to teach program design principles, a glossary, and lists of common messages for each topical section. Indices include lists of materials by language, geographic origin, and special audience, and a list of names and addresses of the agencies that developed the materials.

324. GUATEMALA. Manual Gráfico de Alimentación para Comadronas Adiestradas (Illustrated Manual on Food for Trained Midwives). Westport, Connecticut, Save the Children.

This simply designed booklet for trained midwives uses illustrations and a minimum supporting text to show basic food groups and the special needs of some groups, such as young children and pregnant women; sanitation; and treatment of diarrhea.

325. GUATEMALA. Materiales María Maya. Quetzaltenango.

These materials consist of guidebooks with large, detached black and white illustrations, an instruction book, and a pamphlet on group work. Topics include weaning, growth monitoring, and diarrhea and oral rehydration. Each guidebook includes background information for the health worker, with examples of questions they are likely to be asked and suggestions for specific educational activities to conduct. Continuous testing with the intended audience (Mayan mothers) led to extensive adaptations to the Mayan belief system. Promoters responded enthusiastically to the materials; demand for the materials was high. They were also used with Western-trained doctors to educate them about Mayan beliefs.

326. GUIDELINES FOR CURRICULUM CONTENT IN FOOD AND NUTRITION PLANNING AND MANAGEMENT. Proceedings of the Second FNP Workshop, 8-13 November 1982, Jakarta, Indonesia. Indonesia, Akademi Gizi, Center for Education and Training, Ministry of Health; Los Banos, Philippines, Regional Training Programme on Food and Nutrition Planning; Netherlands Universities Foundation for International Cooperation. 222p.

327. HELSING, E.; KING, F.S. Breast-feeding in Practice: A Manual for Health Workers. Oxford, Oxford University Press, 1982, 271p. bibl.

This manual was developed to assist health workers in countries that have mounted campaigns to encourage breast feeding. Chapters deal not only with physiological principles and problems, but also with the social and emotional influences on a mother's capacity to breast feed successfully. Many specific beliefs regarding the need to terminate breast feeding are refuted, and the authors provide ways in which workers can help mothers gain confidence. Nutritional concerns include weaning foods' quality and introduction, nutritional requirements of the mother, and specific food choices and preparation methods. Appendices present a description of methods for management of lactation failure and directions for preparation of a variety of nutritionally sound weaning foods.

328. HENDRATA, L.; JOHNSTON, M. Manual for Community Based Underfives Weighing Program. Indonesia, Yayasan Indonesia Sejahtera, 1978. 28p.

Weighing programs can be used not only to monitor the nutritional status of children in a community, but also as an educational and motivational tool. This manual, part of a large-scale Indonesian campaign, describes how records should be kept and how potential problems of a program can be overcome. Other related health and nutrition activities are also recommended.

329. INDIA. Tamil Nadu Integrated Nutrition Project. Madras.

This campaign developed posters, flip chart, flannelgraph, stickers, flash card sets, and manuals to address problems such as weaning foods, growth monitoring, vitamin deficiency, and oral rehydration therapy. The materials are meant to be used by community nutrition workers; considerable emphasis is placed on communications skills for the workers. The materials were pretested, and preliminary reports on project impact were positive.

330. INDONESIA. Nonformal Participatory Nutrition Education Project. Westport, Connecticut, Save the Children.

To promote nonformal participatory nutrition education, this project developed a vast array of support materials: games, charts, puppets, slides, story books, comic books, and series of pictures to be used to elicit group participation and development of ideas about nutrition problems and ways to correct them. The materials are specific to the needs and standards of the regions in which they were produced, but can serve as models for promoting participatory education. (See also Bridging the Gap).

331. INDONESIA. Nutrition Education Improvement Project. Jakarta Selatan, Proyek Pengembangan Penyuluhan Gizi, Directorat Penyuluhan Kesehatan Masyarakat.

This project developed posters, radio spots, a flip chart, and a manual, using extensive preliminary research on local food habits and beliefs, as well as involving individuals in the development of the messages used. One of the materials' strengths is that each item (poster, radio spot, etc.) focuses specifically on one problem, transmitting a specific message; the posters also advise mothers to seek further information from health workers. The pilot project evaluation found positive associations among knowledge of the major messages, actual implementation of the recommendations, increased protein and calorie consumption, and improved growth status of the children.

332. INDONESIA. UPGK Family Nutrition Improvement Program. Jakarta Pusat, Division of Nutrition, Ministry of Health.

Coordinated manuals and flip charts were developed for use by three collaborating agencies—the Ministries of Health, Religion, and Agriculture. The emphasis of this program, begun in 1979, has been on training community workers in a series of core nutrition activities and in providing them with simple, clear messages for families. For example, workers in agriculture are trained in home gardening. The community volunteers in the health sector focus on growth monitoring and make specific recommendations for behavior changes in child feeding or family nutrition. The materials used by religious leaders note that to glorify God, parents must do their best to keep their children healthy.

333. INDONESIA. Yayasan Indonesia Sejahtera. Badran, Solo.

This campaign produced games for teaching children nutrition principles specifically related to Indonesian nutrition problems, such as vitamin A deficiency and young child feeding. Dominos, card games, and board games convey the many messages. The quality of production was high, and reception has been enthusiastic.

334. ISRAEL, R.; LAMPTEY, P., eds. Nutrition Training Manual Catalogue for Health Professionals, Trainers and Field Workers in Developing Countries. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1982. 102p.

This catalogue profiles 116 textbooks, instructional guides, curriculum models, and course outlines related to nutrition in developing countries. Materials were screened for quality, content, and generalizability, and are presented by categories, including rehabilitation, appropriate technology, and assessment and surveillance. Each profile describes contents, audience, language, and access. Tables summarize the audience, geographic application, and language(s) of each material.

335. JAMAICA. Breastfeeding Kit. Kingston, Caribbean Food and Nutrition Institute.

This kit provides a complete package to train and equip professionals in the promotion and support of breast feeding. A set of 141 slides shows how to motivate and to provide practical advice, including tips on weaning. The package also includes an audiocassette, teaching notes and guide, four fact sheets, a poster, a booklet for mothers, and a post card for evaluation and for ordering more copies of the support materials.

336. JAMAICA. Eat Right Campaign. Kingston, Ministry of Health.

This campaign was developed to address general and child-related concerns. Much emphasis is placed on a color-coded food grouping system. Materials ranging from flip charts and posters to take-home pamphlets and children's coloring books use a consistent style and set of messages that reinforce each other.

337. KENYA. *Breastfeeding Information Group Campaign*. Nairobi.

The materials produced by this group are directed to both mothers and medical personnel; some address fathers directly, pointing out that their support is needed and offering specific tips on how they can help. Materials for women are aimed at both the pregnant mother's concerns and those of breast feeding women.

338. KENYA. *Macho ya Kenya* (Rural Blindness Prevention Project). Bethesda, Maryland, International Eye Foundation.

This project focused on the many causes of blindness, including infectious diseases and injuries. Some sections also address the need for sufficient vitamin A to prevent vision problems. A children's magazine with stories and games, posters, radio spots, a slide series, and a guide for health workers provided the media for this rural campaign. Informal assessment found enthusiastic participation in the recommended activities, such as fairs and demonstrations.

339. KING, M.H.; KING, F.M.; MORLEY, D.L.; BURGESS, H.J.L.; BURGESS, A.P. *Nutrition for Developing Countries*. London, Oxford University Press, 1980. 230p.

This book may be used in self-teaching or as the basis of a nutrition course for health workers, midwives, agricultural assitants, or school teachers. Each chapter presents a section of "things to do," projects for pairs of students to conduct and present their findings to the rest of the class. The text is written in a basic vocabulary with thorough instructions and illustrations.

340. MORLEY, D.; WOODLAND, M. *See How They Grow (Monitoring child growth for appropriate health care in developing countries)*. London, Macmillan Press Ltd., 1979. 265p.

341. PAKISTAN. *Peshawari Salt Marketing*. Islamabad, UNICEF Pakistan.

This goiter-prevention campaign for the highland areas of Pakistan used a variety of media to promote the use of iodized salt. The packages themselves included stickers used to illustrate a story book that related a traditional tale of a bride who dies on her wedding eve, and whose goitrous sister is at first rejected by the groom. Other materials include an informational booklet for professionals, mobiles hung in stores selling iodized salt, handbills, banners, and calendars. The messages also emphasize the hygienic conditions of the salt and note Koranic exhortations to pursue good health.

342. PARKINSON, S.; LAMBERT, J. *The New South Pacific Handbook of Nutrition*. Suva, Fiji, National Food and Nutrition Committee, 1982. 92p.

Although especially designed for the South Pacific region, this handbook is a practical reference that would be a good model for nutrition educators developing materials for other regions. Straightforward illustrations and simple language present principles of food groups, nutrition-related diseases, and awareness of options in the choice and use of foods. The appendices provide a reading list and an easy-to-read food value chart.

343. PERU: Promoción de los Alimentos Indígenos (Promotion of Indigenous Foods). Lima, Instituo Nacional de Nutricion.

The Andean region is the source of some highly nutritious foods, neglected in favor of imported or non-native foods. This campaign promoted the status of these foods through awareness of their superior nutritive value and the ease of producing them. Materials include recipe booklets, a film strip, a booklet on using the foods for feeding young children, and promotional pamphlets.

344. PHILIPPINES. Priority Nutrition Messages: New Directions for the Philippines Nutrition Program. Makati, Metro Manila, Nutrition Center of the Philippines.

This campaign featured a flip chart for health professionals which included summaries of all the major messages of the campaign, ranging from general nutrition guidance to specific causes and remedies for vitamin A deficiency.

345. PROFILING NUTRITION EDUCATION MATERIALS: AN INSTRUMENT WITH MANUAL. Oakland, California, Society for Nutrition Education and Center for Nutrition Education, 1983. 14p.

The Society for Nutrition Education has produced this tool for educators to use in selecting nutrition education materials and resources. The instrument itself consists of a series of simple questions for the evaluator to answer: for example, is terminology used correctly, and are ethnic groups depicted without sterectypes. Some of the questions, such as the first example, require some nutritional expertise, indicating that this tool is principally of use to educators already familiar with nutrition principles; it would not be of use to the average school teacher. The first section of the document, "reviewer's manual," provides guidelines for answering the questions and evaluating the results. The format is particularly useful for producing a series of consistent profiles when there is a variety of materials or reviewers.

346. RITCHIE, J.A.S. Learning Better Nutrition: A Second Study of Approaches and Techniques. Rome, FAO, 1979. 264p.

This book examines the social, economic, and technical changes influencing nutrition education and training programs. It presents a justification of the need for such education; the background information on which the education should be based; guidance for its planning, support, and evaluation; and descriptions of the educational channels and methods that seem to show the greatest promise.

347. SOMMERS, P. Home Gardens: Handbook for Programme Officers. New York, UNICEF, 1980. 59p.

This manual provides technical guidance for trainers in the development of policies and programs that promote home gardens. Economic considerations, technical gardening guidelines, and lists of materials provide a comprehensive guide to establishing and conducting a gardening project suited to the needs of the community. Appendices list tropical materials that can be used as mulch, or as organic fertilizer, and a table correlating specific vegetables to various nutrients.

348. SOMMER, A. Field Guide to the Detection and Control of Xerophthalmia. Geneva, WHO, 1978. 47p.

This manual provides practical guidelines for clinicians, nurses, and public health officials involved with the diagnosis and prevention of vitamin A deficiency. A case of visible eye signs of deficiency is a medical emergency, requiring treatment with massive doses of the vitamin; but long-term prevention of new or recurring cases ideally lies in providing a diet with adequate vitamin A. Since it is available in breast milk and from many common and cheap foods, such as green, leafy vegetables, even the very poor can have adequate diets if they are motivated and aware of the causes, consequences, and means of preventing this deficiency. Thus, nutrition education should be used against vitamin-A deficiency blindness at all levels: medical personnel, families of vulnerable children, and public officials.

349. U.S. CENTERS FOR DISEASE CONTROL. Source Book for Health Education Materials and Community Resources. Washington, DC, Centers for Disease Control, Center for Health Promotion and Education, 1982.

350. U.S. DEPARTMENT OF AGRICULTURE. Nutrition Education Resource Guide: An Annotated Bibliography of Educational Materials for the WIC and CSF Programs. Washington, D.C., USDA, Human Nutrition Information Service, 1982. 146p.

351. WERNER, D.; BOWER, B. Helping Health Workers Learn. Palo Alto, California, The Hesperian Foundation, 1982.

This book is about training health workers; it is not a specified curriculum or a list of topics to be taught. Based on principles of community participation and awareness, it offers a profusion of practical exercises and examples for educators to use. The chapter on nutrition guides the reader through an understanding of the many possible causes of malnutrition, from inappropriate weaning foods to oppressive agricultural policies. Simple and practical guidelines are provided for assessing community nutrition status, needs, and resources. The Road-to-Health chart and the thinness chart are explained, arm circumference measurement techniques are described. A checklist of questions to ask about the nutrition of the community covers the many possible causes and leads to analysis and appropriate intervention and community action. Examples of activities range from instructions for making child-weighing scales to a fotonovela about the importance of adequate food.

352. WHO. *A Manual for the Treatment of Acute Diarrhoea*. Geneva, Diarrhoeal Diseases Control Program, WHO, 1980. 25p.

This booklet presents the technical rationale and methodology for providing oral rehydration, instead of intravenous solutions. Packets of premeasured oral rehydration salts are available through WHO and UNICEF for the use of health workers; they are superior to homemade preparations with sugar and salt because they also contain bicarbonate (to correct the base-deficit acidosis) and potassium to replace that lost through diarrhea.

353. WHO. *Guidelines for Training Community Health Workers in Nutrition*. Geneva, Switzerland, WHO, 1981, 153p. (WHO Offset Publication No. 59) [Also published in French]

This manual presents lessons in community needs assessment; monitoring children's nutritional status; maternal nutrition; identification, management, and prevention of nutritional deficiencies; nutrition and diarrhea; nutrition and infection; and teaching methods. Specific activities and objectives are offered for each topic, including problem-solving discussions, demonstrations, role playing, and practice teaching exercises.

354. WHO. *The Primary Health Worker: Working Guide; Guidelines for Training; Guidelines for Adaptation*. Revised ed. Geneva, Switzerland, World Health Organization, 1980. 346p.

355. ZAIRE. *Nutrition*. Kangu-Mayumbe, Bureau d'Etudes et de Recherches pour la Promotion de la Santé.

This project developed a nutrition manual, a flannelgraph, and a series of pictures available in different sizes. The pictures may be used as a comprehensive nutrition course, or topical sections may be used for the special needs of specific groups, such as mothers of young children. Throughout, the illustrations feature a system of three food groups and the family as the context of food preparation and consumption. The Bureau also produces related nutrition education materials, such as pamphlets, in several languages.

356. ZAMBIA. *National Nutrition Education Campaign*. Lusaka, National Food and Nutrition Commission.

This campaign addressed Zambian malnutrition problems by increasing understanding of the causes and possible remedies for malnutrition, especially care in the feeding of young children, treatment of diarrhea, and detecting malnutrition by regular weighing. Materials feature photographs carefully screened for understanding by audiences not accustomed to interpreting illustrations on paper; the most comprehensible style was found to be full human figures, with any background removed. Poster series illustrate principles of recognition of malnutrition; overconsumption of alcohol as a drain on a family's ability to afford adequate food; and the needs of pregnant women, including not only their need for extra food, but also for decreased physical demands in their work.

357. ZEITLIN, M.E.; FORMACION, C.S. Nutrition Intervention in Developing Countries, Study 2: Nutrition Education. Cambridge, Massachusetts, Oelgeschlager, Gunn and Hain Publishers, Inc., 1981. 349p.

This book, presented from the perspective of the large-scale planner, addresses methods for planning, implementing, and evaluating nutrition education programs. Target groups include mothers and children, medical and agricultural professionals, politicians, planners, and heads of ministries, and commercial advertisers. Each group is discussed in terms of the appropriate channels of communications needed to reach them. Strategies for goal-setting and problem-solving are presented. Great emphasis is placed on designing appropriate educational messages; evaluation methods are discussed. The final section describes a case study, a Philippine project which used radio for teaching mothers to enrich the traditional weaning porridge. The manual contains explanations of common models of knowledge, attitude, behavior, and status concepts; and tables, charts, and worksheets, such as a form for taking 24-hour recalls of infants' diets.

VI: Evaluation

358. ANDRIEN, M. Evaluation du Programme d'Education Nutritionnelle du Centre Hospitalier Régional de Bouaké. Service d'Evaluation du Ministère de l'Enseignement Primaire et de l'Education Televisuelle de Coté d'Ivoire et Laboratoire de Pedagogie Experimentale de l'Université de Liège, July 1981. 101p.

The pediatric department of this Ivory Coast hospital has offered nutrition education to mothers of malnourished children since 1975. The two-year formal evaluation was based on studies of mothers of 96 children. Compared to non-participants, mothers who had received the nutrition education were more likely to know what constituted a nutritionally well-balanced meal; to prepare a special dish for their children; and to give their children animal protein foods. But most participants did not attribute their children's illness to malnutrition, and they had considerable difficulty in classifying foods into the three groups taught in the program. The evaluation will be ongoing and will be used as a basis for refining and improving the program.

359. AREAS NEEDING IMPROVEMENT IN THE ADULT EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM. Washington D.C., Report to the Secretary of Agriculture, U.S. General Accounting Office, 1980. 54p. (CED-80-138)

360. A FIELD GUIDE FOR EVALUATION OF NUTRITION EDUCATION: AN EXPERIMENTAL APPROACH TO DETERMINATION OF EFFECTS ON FOOD BEHAVIOR IN LESSER DEVELOPED COUNTRIES. Allison Park, Pennsylvania, Synectics Corporation for U.S. Agency for International Development Office of Nutrition, Technical Assistance Bureau, 1975. 76p.

This guide is a prototype methodology for assessing the effectiveness of nutrition programs in improving the nutrition-related behavior of participants. An evaluation methodology based on literature reviews and expert opinion was developed and experimentally applied to Brazilian programs using three approaches: person-to-person, group teaching, and mass media. Further refinements led to this guide, which presents the results of the Brazilian test and provides specific guidelines on planning, designing, implementing, and analysing nutrition education programs.

361. BARNES-KALUNDA, S. Consultant Report for Zaire (February 23 - March 17, 1982): Evaluation of the Mass Media Component of A.I.D.'s Nutrition Planning Project in Zaire. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1981. 30p.

Zaire's Centre National de Planification de Nutrition Humaine (CEPLANUT) conducted a broad nutrition intervention project; the mass media component was evaluated after two years of operation. This report presents the methodology and findings of the evaluation, which reinforced the importance of good underlying field research and coordination among administrative entities, and described the difficulties of developing an effective campaign involving multiple themes. The consultant presents her observations of the effectiveness of the program and provides a sample questionnaire to be used with participants in the field investigation.

362. BROWN, R.C.; BROWN, J.E.; TEETER, R.A. Evaluation of a nutrition center program in rural Africa. Journal of Tropical Pediatrics, vol. 26, 1981, pp. 37-41.

This program operated nutrition centers in seven villages around Bulape, Zaire. Malnourished children 5 to 24 months old, accompanied by their mothers, spent 12 weeks in the centers. Families provided wood and foods; the centers provided a trained auxiliary who provided nutrition education and supervised food preparation. Children were evaluated upon discharge and nine and 12 months later. Compared with matched control children who had not attended the centers, participants showed little advantage: boys' weight-for-age and weight-for-height improved during their stays at the centers, but the benefits did not persist; girls showed no advantage. The paper discusses possible reasons for this lack of impact.

363. BURGESS, A. Evaluation of Nutrition Interventions: An Annotated Bibliography and Review of Methodologies and Results. 2d ed. FAO Food and Nutrition Paper No. 24. Rome, Italy, Food and Agriculture Organization of the United Nations, 1982. 198p. bibl.

This report contains over 110 items on evaluation methodology and 300 items describing the outcomes of nutrition interventions in evaluation studies. In addition to a summary of the content, most references are also appraised in terms of usefulness, validity of survey design, and acceptability of the conclusions. The most useful items are both starred and indexed in three tables that list references on evaluation methodologies according to the major topics covered and evaluation studies and reviews of evaluation reports of particular interest according to specific types of programs or services. All items either cover methodological aspects relevant to evaluating the nutritional impact of intervention activities or report the nutritional impact of these interventions in developing countries.

364. CLARK, N.; MCCAFFERY, J. Demystifying Evaluation. New York, World Education, 1979. 70p.

This guidebook provides detailed instructions for conducting a workshop on evaluation; the intended audience is apparently agency-level personnel interested in evaluating the effectiveness of field programs. The presentation is based on a preliminary workshop held in Kenya, including representatives of World Education projects in Ghana and Ethiopia. The approach is to evaluation in general, rather than nutrition programs *per se*, but the content is quite generalizable. The phases of the seminar included introductions to experience-based learning, justification for the need for evaluation, field work, action and reflection, and synthesis. The guide is generously illustrated and provides step-by-step instructions for conducting the workshop.

365. COOKE, T.M. Consultant Report for Chile (June 23 - July 3, 1981): Evaluation of a Mass Media Nutrition Education Program. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1981. 19p

This report presents the consultant's evaluation of Chile's proposed breast feeding promotion mass media campaign. Conducted at the beginning stages of the project's implementation, the evaluation is an assessment of the development strategy of the campaign, which was determined to have been conducted carefully and thoroughly. The consultant offers many specific suggestions and comments regarding the messages and materials about to be used, such as the lack of specific guides to new behaviors in some of the behavior-change messages. Such messages must not only motivate to change an inappropriate behavior; they must also offer an appropriate new behavior. The implementation and evaluation strategies are also examined, and further suggestions offered.

366. DEVADAS, R.P.; SAROJINI, K.S. Evaluating the impact of nutrition/health integrated curriculum on the primary school children and teachers in selected schools in Coimbatore district. Indian Journal of Nutrition and Dietetics, vol. 15, 1978, pp. 295-301.

Teachers from 40 randomly selected schools in Combinatore District, India, were given a five-day course in principles of nutrition and health. They then taught nutrition in the classrooms, integrated into the regular curriculum. The course promoted the selection, production, preparation, conservation, and consumption of a well-balanced diet. Evaluation showed improved knowledge of both the teachers and the students, differing significantly from a control group. Beliefs and practices also improved; for example, the teachers had improved the lunch served at the schools.

367. DEVADAS, R.P.; SAROJINI, K.S.; RAJAKUMARI, S. Impact of nutrition and health education on the growth and development of primary school children in selected areas of Tamil Nadu, India. Indian Journal of Nutrition and Dietetics, vol. 18, no. 1, 1981, p. 1-8.

A baseline survey of the cultural, social, demographic, and economic status of 2,651 families of lower-class children attending 660 schools in Tamil Nadu (Kanyakumari, Nilgiris, and Combinatore districts) was used as the basis of a nutrition education program at the elementary-school level. Special five-day courses were provided for all 3,600 teachers from the schools, and teachers were given specially designed classroom materials. Evaluation at the end of the course and after 18 months of implementation showed significant results: teachers' knowledge and nutrition-related practices improved dramatically, and the teachers were able to identify and address nutrition-related problems in their students. They implemented the recommended curriculum and produced significant improvements in their students' nutrition knowledge, practices, and status. A table displays the rates of decrease of several nutrient deficiency signs. The behavioral impact extended to the children's homes; in most homes, practices improved in cooking methods, in including greens in the diet, and in garbage disposal.

368. GREEN, L.W. Evaluation and measurement: Some dilemmas for health education. American Journal of Public Health, vol. 67, no. 2, 1977, pp. 155-161.

The nature of health education poses seven dilemmas discussed in this paper: (1) rigor of experimental design vs. significance or program adaptability; (2) internal validity or true effectiveness vs. external validity or feasibility; (3) experimental vs. placebo effects; (4) effectiveness vs. economies of scale; (5) risk vs. payoff; (6) measurement of long-term vs. short-term outcomes; and (7) threshhold vs. diminishing return levels of expenditures on education. The discussion places emphasis on the need to develop a more complete data base against which to standardize measures; replication of experiments in different settings; and better documentation, reporting, and diffusion of experience.

369. GUTHRIE, H.A.; SCHEER, J.C. Validity of a dietary score in assessing nutrient intake. Journal of the American Dietetic Association, vol. 78, 1981, pp. 240-45.

370. HOORWEG, J.; MCDOWELL, I. Evaluation of Nutrition Education in Africa: Community Research in Uganda, 1971-1972. The Hague, Netherlands, Afrika-Studiencentrum Communication No. 6. Moulton Publishers, 1979, 158p.

The major purpose of this sutdy was to contribute to methods in evaluative research in nutrition intervention programs. Conducted in the inpatient and outpatient departments of a Nutrition Rehabilitation Center (NRC) in Kampala and an outpatient clinic at Luteete, the study administered pre- and post-tests to mothers receiving nutrition education. Nutrition knowledge and food preferences were improved, and more mothers could recognize signs of malnutrition. In rural areas, the factors most strongly correlated with a child's recovery were amount of land, size of household, and help received by the mother; in urban areas, the strongest correlation--a negative correlation--was between recovery and mother's education. Low correlations between food resources and children's diets are attributed to methodological shortcomings (mothers' inaccurate responses). Throughout the report, considerable attention is given to constructing appropriate measurement techniques.

371. HORNIK, R.C. An approach to evaluation for breastfeeding campaigns. In: Israel, R.C., ed., Using Communications to Solve Nutrition Problems. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, in press.

Few breast feeding campaigns are evaluated; those that are usually ask the question, "did it work?" Such a narrow perspective on project evaluation is less likely to be successful than evaluation based on questions designed to gain information on how the program could improve its operations. Choosing these questions, based on an understanding of the project and the population, and interpreting the results are key to a productive and useful evaluation. Evaluation in terms of project-oriented concerns is addressed, rather than broader, policy-oriented evaluation.

372. JACOBSON, H. N. Nutrition Evaluation: Promises and Dangers. The University of North Carolina, Occasional Paper Series, vol 2, no. 1, September 1979.

In an era of scarce resources and increasing demands for accountability, evaluation of nutrition programs of all types is becoming increasingly important. Problems arise under two circumstances: when the goals and objectives of the program to be evaluated are not clear enough to provide guidance on the desired outcomes, and when evaluations are asked to go beyond the state of the art. The latter problem is particularly common in nutrition education, and the particular danger here is that any finding may well be a false positive or false negative result. This paper discusses technical development of reasonable expectations on the parts of program planners, the people served by the programs, and the providers of services.

373. JELLIFFE, D.B.; JELLIFFE, E.F.P. Consultant Report for Brazil (March 21-31, 1982): An Assessment of the Brazilian National Breast Feeding Promotion Campaign. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1982. 58p.

This consultant team was invited by the Brazilian National Institute of Nutrition (INAN) to evaluate the national nutrition promotion project as it enetered its second phase. The report presents an itinerary and the team's comments and recommendations for each of the many components of the campaign. A final section on evaluation considers not only the development of an evaluation strategy for this program, but the need for a generalizable methodology for evaluation of breast feeding promotion programs in general.

374. JELLIFFE, D.B.; JELLIFFE, E.F.P. Consultant Report for Brazil (July 31 - August 14, 1983): A Follow-Up Visit to Assess the Progress of the National Breastfeeding Promotion Program. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, 1983. 84p.

This progress report indicates that the Brazilian project has accomplished an effective and widespread breastfeeding promotion campaign, making use of many mass media. Television advertising, newspaper columns, booklets, photography contests, cartoons, and literacy-training materials were among the media used. Popular sentiments were evidently affected, as there was also spontaneous advocacy of breastfeeding by television programs and sports figures. Changing of the general social and medical attitudes towards breastfeeding seems to have been accomplished; formal evaluation will commence in 1984. Mothers' support groups, information dissemination by health services, support for working women, and contacts with the infant food industry are also components of the campaign. The report is illustrated with examples of materials and scripts used, including photographs of the materials in use.

375. KLEIN, R.E.; READ, M..S.; RIECKEN, H.W.; BROWN, J.A.; PRADILLA, A.; DAZA, C.H., eds. Evaluating the Impact of Nutrition and Health Programs. New York, Plenum Press, 1979. 462p.

This book presents papers from a conference that focused on the need for impact measures of health and nutrition programs, particularly in Latin America. Nutrition education is one of many nutrition interventions considered. One section discusses educational achievement as an outcome of nutrition intervention programs. The papers address the assessment of specific outcomes of interventions, implementing and using evaluations, and practice and problems of impact evaluation.

376. KOLBE, L.J. Evaluating effectiveness--the problems of behavioral criteria. Health Education, January/February, 1979, pp. 12-16.

School-based health education faces unique problems, particularly when asked to produce changes in behavior rather than simple increases in knowledge (as most school curricula). Particular problems include: (1) school health education is primarily designed to influence health rather than illness or sick-role behaviors; (2) it attmepts to influence many different and unrelated behaviors; (3) it addresses fairly large groups; (4) it focuses only upon youthful populations; (5) health-related behaviors are difficult to observe; (6) the causal relationship between school-based education and any observed behavioral change is difficult to establish; (7) public school teachers generally are not trained in evaluation methodology or theory; (8) they are quite properly threatened by the adoption of behavioral criteria to indicate program effectiveness; (9) determining whether programs are effective in changing behavior might be less important than evaluating why such programs are or are not effective; (10) teachers are not trained in behavioral change theory or practice; (11) if school health education is to be evaluated on behavioral critera, educational techniques should move from a decision-making focus (in which students select from alternative behaviors) to persuasion-communication approaches; and (12) all the problems mentioned above are felt more sharply at the elementary level.

377. LEVINE, R.R.; MCCHESNEY, A.S.; BRUSH, M.K. An assessment of high school nutrition education. Journal of Nutrition Education, vol, 11, 1979, p. 124.

378. MANOFF, R.K. Consultant Report for Brazil Volume II (March 21-31, 1982): An Assessment of the Communications Component of the Brazilian National Breast Feeding Program. Newton, Massachusetts, International Nutrition Communication Service, Education Development Center, through subcontract to Manoff International, Inc., Washington, D.C., 1982. 42p.

This report outlines the innovative communications strategy used by the Brazilian national breast feeding program (see also Jelliffe and Jelliffe, above). This action-oriented program includes carefully developed components that address all of the many players in the promotion of breast feeding; among these are not only the mothers themselves but also their families, health personnel, hospitals, food and other industries, government officials, and the community at large. Appendices present the texts of addresses delivered to the program's national working group to outline the principles of design, implementation, and evaluation of mass media programs.

379. MCKENZIE, J.D.; MUMFORD, P. The evaluation of nutrition education programmes: A review of the present situation. World Review of Nutrition and Dietetics, vol. 5, 1965, pp. 21-31.

This paper presents a review of the status of nutrition education evaluation in the United States. Most nutrition education programs were found to rely simply on transmission of information and did not conduct evaluations, assuming that their audience, with sufficient income and respect for scientific knowledge, would take action on the information. Evaluation was also neglected because it "comes at the end of a programme" and demands special efforts and resources. The author reviews the few evaluated programs, including evaluations with "negative results" as well as positive. The author concludes that success or failure is determined by the methods used, the personalities involved, and the prevailing circumstances. She calls for closer cooperation between nutrition professionals and those in the social sciences.

380. REPORT ON NUTRITION CONCEPTS EVALUATION STUDY. Ottawa, Canada, Department of National Health and Welfare, 1979. 62p.

381. SAHN, D.; PESTRONK, R. A Review of Issues in Nutrition Program Evaluation. AID Program Evaluation Discussion Paper No. 10. Chevy Chase, Maryland, AID/DIHF/ARDA, 1981. 220p.

382. SCHURCH, B., ed. Evaluation of Nutrition Education in Third World Communities. Bern, Stuttgart, Vienna, Hans Huber Publishers, 1982. 235p.

Without evaluation, we shall never know where we stand and will not know whether any intervention or type of intervention has been worthwhile. This workshop collected papers on topics promoting the development of appropriate motivations and methodologies in the evaluation of nutrition education programs. Topics included: integrating evaluation into programming; assessment of knowledge, attitudes, and behavior; validity of dietary survey methods; food composition tables; choosing indicators of nutritional status; assessing the preventive impact of nutrition education; impact evaluation; whether control of non-treatment variables is necessary; cost evaluation; and the generalizability of evaluation protocols.

383. ST. PIERRE, R.G.; REZMOVIC, V. An overview of the national Nutrition Education and Training Program evaluation. Journal of Nutrition Education, vol. 14, no. 2, 1982, pp. 61-66.

The U.S. national Nutrition Education and Training Program (NETP) was funded to provide nutrition education to school children, their teachers, and food service personnel; and to provide for the development of nutrition education materials. A preliminary evaluation after two years of operation found that the program was meeting its initial objectives: programs were operating in nearly all states; funds were being used as intended, focusing on local rather than large-scale development; programs were addressing the problems identified in state-level needs assessments. Both centralized (state-level curricula) and decentralized (multiple or generalized curricula) were found to have had large positive influences on children's nutrition-related knowledge. There was some willingness to try new foods (a major attitude change) and some positive effect on food preferences and other attitudes, but these effects were not as strong as the effects on knowledge. This article presents the design and implementation of the evaluation in detail.

384. TRAGLER, A.T.; BHATT, S.S.; FERNANDEZ, A. Assessment of health education in nutrition. Journal of Tropical Pediatrics, vol. 27, 1981, pp. 221-223.

Mothers of 200 children under one year old received nutrition education through the pediatric department of a general hospital in Bombay, India. Pediatric social workers and cooks gave presentations including the importance of breast feeding, early introduction of semi-solid foods, frequent small meals, cheaply available nutritious foods, and hygiene. Flip charts and other aids were used. A questionnaire at the end of the session indicated that 40% of the mothers had fully understood the presentation, 32% asked questions and needed further explanations, and 28% did not understand what had been presented.

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